

Chapter 2 Project Alternatives

2.1 Project Alternatives

The purpose of the alternatives analysis is to facilitate meaningful public participation through an informed decision making process. CEQA requires a reasonable range of alternatives be considered that accomplish the agency's objectives. A comparative analysis of the alternatives will aid in defining the issues and to provide a clear basis for choice by the decision-makers and the public. Final selection of an alternative will not be made until after the full evaluation of environmental impacts, consideration is given to public comments, and upon approval of the final environmental document.

There are currently three alternatives plus a no-build Alternative under consideration Table 4 below provides a brief summary of the proposed alternatives. Please also see Appendix C for aerial photography with all design elements for each alternative.

Table 4. Summary of Alternatives and Construction Estimates (Current Dollars as noted)

Alternative Number	Proposed Improvements	Add Mainline Lanes		Add/Modify Auxiliary Lanes	Add TOS Elements	TOS Elements Costs *	Right of Way Costs *	Construction Cost *
		Mixed Flow	HOV					
1	Mixed-flow lanes Auxiliary lanes TOS	√		√	√	\$2	\$3.3	\$89
2	HOV lanes (with enforcement area) Auxiliary lanes TOS		√	√	√	\$2	\$3.3	\$89
3	Auxiliary lanes TOS			√	√	\$2	\$0.5	\$11
No-Build	No changes to the existing freeway						None	None

* Note: Costs are in millions of dollars.

2.1.1 Alternative 1

Alternative 1 proposes to add an additional mixed-flow mainline lane in each direction from 1.1km (0.7mi) west of the Sacramento/Placer County line (KP 28.2, PM 17.5) to 1.56km (0.97mi) east of the SR 65 Connector (KP 8.3, PM 5.1). At the

western project limits, the beginning of the additional mixed flow lane would require a minor lane shift so that it would not connect directly to the separately funded Sacramento HOV lane addition project currently in construction and scheduled for completion by 2005. The freeway widening portion of the Sacramento HOV project (identified by Caltrans as Expenditure Authorization 03-3546U4) originates near Watt Avenue and ends at approximately 0.64 km (0.4 miles) west of the Sacramento/Placer County line.

Mixed flow lanes should not directly enter HOV lanes because the likelihood of high violations at the junction. For this reason, the new westbound mixed flow lanes would connect to the adjacent mixed flow lane at the project terminus, west of the Riverside Avenue. To accomplish this, freeway widening to the outside would be necessary with a combination of geometry changes, ramp realignment, and striping modification. Refer to the layout plans in Appendix C for more details.

2.1.1.1 Coordination with other projects

This project's alternatives were designed to match up with the designs of the Sacramento HOV lane project. Several features are significant to note. The Sacramento HOV lane project has extended the median shoulder replacement up to the Cirby Way overcrossing as part of their concrete barrier replacement. The shoulder structural section has been designed for traffic loads and would not need to be replaced when traffic lanes are shifted toward the median as part of this lane-widening project.

The Douglas interchange project proposes several major improvements with direct effect on the freeway design. The project proposes a direct link from northbound Sunrise Avenue to the existing eastbound I-80 onramp by using two tunnels; one under Douglas Boulevard and one under the I-80 eastbound loop offramp. The tunnel onramp would merge with the freeway onramp, which then merges onto the freeway. Due to the geometrics of the tunnel, the area near the outlet would require realignment by the I-80 improvement project to accommodate the mainline widening. A second feature of the Douglas proposal is a flyover from Douglas Blvd. across the I-80 freeway to southbound Sunrise Avenue (towards Citrus Heights). The structure has been evaluated by design and does not show major conflicts with the I-80 widening proposal. A third feature of the Douglas project is the widening of short segments of the freeway, per Caltrans request. In the westbound direction, a fourth lane would be extended from the Atlantic Street overcrossing to the Douglas Boulevard offramp. In the eastbound direction, a fourth lane would be extended from

the Douglas Blvd. onramp to slightly east of the Eureka Road offramp. A fourth feature, requested by Caltrans, is minor widening in and around Douglas ramps to accommodate proposed future I-80 freeway widenings.

2.1.1.2 Other Improvements

The outside lane on eastbound I-80, which originally dropped near the Riverside Avenue/Auburn Boulevard onramp, would be extended to exit at the SR 65 connector. Both the westbound SR 65 connector and westbound Taylor onramp would merge onto the outside lane. The lane would continue past the optional offramp and onramp for Atlantic Street/Eureka Road. The fifth outside lane would then exit to the Douglas Boulevard offramp. Because of the lane configuration changes in the mainline, 23 interchange onramps and offramps would be partially modified to accommodate the lane additions and to also meet current design standards. One location within the project limits is identified as requiring additional right-of-way. On the southern side of I-80 between Douglas Boulevard and the Lead Hill Boulevard overcrossing, additional right of way would be required in order to meet freeway lane, shoulder, and safety standards. The total right of way proposed to be acquired is less than 0.1 hectares (0.3 acres).

The Linda Creek Bridge (Bridge #19-0027) and the Miner's Ravine Bridge (Bridge #19-0056) on I-80 would be widened. Linda Creek Bridge will be widened for the eastbound direction only, while Miners Ravine Bridge will be widened in both directions. The proposed additional eastbound lane will be dropped east of the SR 65 connector. The lane addition for the westbound direction will begin at approximately the same location. Cirby Creek merges with Linda Creek just west of I-80. However, when I-80 was designed and constructed, the bridge over Cirby Creek was named the Linda Creek Bridge, and assigned Bridge # 19-0027. Therefore, for consistency throughout this document and with Caltrans design information, the I-80 Bridge over Cirby Creek will be referred to as the Linda Creek Bridge. Direct references to Cirby Creek will remain the same.

A total of 3.4 km (2.1 mi) of retaining walls would be used where right of way is limited. Sound walls are recommended in the westbound direction only at the western and eastern ends of the project. The western end walls are adjacent to a mobile home park and a church. The eastern end walls are adjacent to single family homes and a public park. Guardrails would be installed near the retaining walls. Utility relocations would be necessary where widening is adjacent to high concentration of utility features in areas near Douglas Boulevard and Sunrise Avenue.

Overpasses are to be widened to allow for the proposed additional travel lanes and for the geometric realignments created by the widening. At four locations, widening would include removal of portions of the bridge abutment fill and installation of tieback retaining walls. The overcrossings affected are at Lead Hill Road and Eureka Road/Atlantic Street. Type 50 median barriers within the project limits would be replaced with Type 60 barriers from approximately KP 11.00 (PM 6.8) near Cirby Way to the eastern end of the project east of SR 65. Existing overhead sign structures and soundwalls in conflict with widening would likely be removed and replaced. In the eastbound direction, a segment of soundwall from KP 1.6 to 1.7 (PM 1.0 to PM 1.1) is proposed to be demolished and reconstructed further from the traveled way.

2.1.1.3 Traffic Operation Systems Element

Traffic Operation System improvements would be implemented at various locations within the project to increase operational efficiency and to complement the new freeway configuration (see Appendix C and/or Table 3 for locations). Ramp meters, closed circuit television cameras, traffic monitoring stations, changeable message signs, and fiber optic conduit are proposed for installation. The implementation of the TOS improvements would allow real-time monitoring of traffic conditions along the I-80 corridor, especially during peak hours. Closed Circuit Television Cameras (CCTV) allow visual monitoring of the traffic situation. The TOS elements allow effective management of traffic flow with tools such as Changeable Message Signs (CMS) and ramp metering. In conjunction with ramp meters, HOV bypass lanes would be constructed on the onramps at Riverside Ave, Atlantic St./Eureka Road, and Taylor Road. Other elements of the TOS upgrades such as Traffic Monitoring Stations (TMS) would record and archive traffic data for use in future traffic analysis. The estimated current cost of implementing the TOS elements is \$2.0 million dollars. The TOS elements would be connected to the Regional Transportation Management Center in Ranch Cordova.

2.1.1.4 Phasing

If phasing is chosen due to funding limitations, the implementation order of the smaller independent projects is as follows:

Phase 1

Construct a fourth auxiliary lane on eastbound I-80 from the Riverside Avenue onramp to the Douglas Blvd. northbound offramp. One HOV bypass lane would also be added to the Auburn Blvd/Riverside Ave. onramp, with the ramp geometry designed for compatibility with Phase 2. The proposed mainline mixed flow auxiliary

lane would extend an existing fourth lane which originally ended near the Riverside Avenue onramp. The widening would be in the median shoulder and outside shoulder. Assuming replacement of structural section, the cost is estimated at \$4.6 million.

Phase 2

Implement Alternative 1 improvements on eastbound and westbound I-80 between the Sacramento/Placer County line and the Eureka Road/Atlantic Street offramp. Improvements would include lane additions, bridge widenings, tieback walls, retaining walls, soundwalls, and TOS elements. A supplemental report would need to be completed to estimate individual capital costs for each phase.

Phase 3

Complete the balance of the Alternative 1 improvements between the Atlantic/Eureka interchange and east of the SR 65 connector. Improvements would include lane additions, bridge widenings, tieback walls, retaining walls, soundwalls, and TOS elements. A supplemental report would need to be completed to estimate individual capital costs for each phase.

The combined cost for completing the alternative improvements under separate contracts would likely be more than the whole project completed as one contract. If project phasing is used, the capital costs should be reevaluated at that time.

The total preliminary construction cost of Alternative 1 is \$89 million, which includes \$3.3 million for ROW related expenses including acquisition and utility relocation.

2.1.2 Build Alternative 2/Environmentally Preferred Alternative

CEQA requires that an environmentally preferred alternative be identified in the EIR. The no-build Alternative (see Section 2.1.4) would not result in any construction related impacts, however it does not solve existing traffic safety and operational deficiencies or accommodate projected future traffic demand volumes associated with the approved and planned development of the south Placer County region. Therefore, Alternative 2 is the environmentally preferred alternative. Please also review Chapter 3 where the impacts of the proposed freeway improvements on the existing environment are evaluated.

Alternative 2 is very similar to Alternative 1 except that it proposes to add an HOV lane instead of a mixed-flow lane in each direction of I-80. The additional mainline

lanes will be designated as HOV lanes during high traffic demand periods, and will be designated as mixed flow during off-peak periods. The authority for establishing HOV lanes is given in Section 25485 of the California Public Resources Code, Section 149 of the Streets and Highways Code, and Section 21655.6 of the California Vehicle Code. Among the many goals of an HOV lane is to improve air quality and reduce congestion. HOV lanes reduce air pollution and mitigate traffic congestion because they move more people in a comparable number of vehicles than mixed flow travel lanes. Fuel savings are also typically realized (again helps reducing emissions of pollutants) in an HOV lane alternative.

The HOV lane periods are expected to be consistent with the time periods used throughout the Sacramento Metropolitan region. The current hours of operation are 6am to 10am and 3pm to 7pm Monday through Friday. The major design difference with Alternative 1 is the westbound connection with the existing freeway lanes for Alternative 2. A transition lane located at the eastern limit of the project would be used to separate the mixed-flow westbound traffic from the newly designated part-time HOV lane. The western terminus for the westbound direction would connect directly with the Sacramento I-80 HOV lanes. All other project features are the same as proposed in Alternative 1 including: TOS elements, structural sections, bridge widenings, retaining walls, sound walls, and construction phasing.

2.1.2.1 CHP Enforcement Areas

The HOV lanes proposed would be supplemented with CHP enforcement areas at three locations within the median. Three directional enforcement areas are proposed between the Cirby Way and Douglas Boulevard overcrossing; the Eureka Rd./Atlantic St. and Roseville Pkwy overcrossing; and Taylor Rd and SR 65 overcrossing. Because of the specific design requirements of the enforcement zones, all median shoulders and barriers within the zones would be reconstructed. The structural section used for the enforcement area in the median would be equivalent to the mainline for pavement conformity and durability.

2.1.2.2 Safety

A safety study on HOV lanes done by California Polytechnic State University at San Luis Obispo found that HOV facilities had accident rates that did not differ significantly from mixed flow highway sections. Accident rates for the similar highway sections compared were almost entirely related to differences in their flow and congestion patterns rather than anything inherent in the geometric or operational characteristics of the HOV facilities themselves. Because most accidents in urban

areas are a result of congestion, Alternative 2 provides reduction of total vehicle-miles traveled, compared to the no-build Alternative, and therefore contributes to lower accident levels within the project limits.

The estimated total construction cost of Alternative 2 is up to \$89 million, which includes \$3.3 million for ROW related expenses including acquisition and utility relocation.

2.1.3 Build Alternative 3

Alternative 3 proposes one eastbound auxiliary lane and TOS elements. All widening of the pavement would be toward the outside shoulders. The alternative is an operations improvement. The fourth (outside) eastbound freeway lane near Riverside Avenue would be extended as an auxiliary lane and exit at the Douglas Blvd northbound offramp. Currently the eastbound freeway segment between Riverside and Douglas is three lanes. The new pavement would have the same structural section as recommended for the new mainline; however, gap-graded rubberized asphalt concrete (GGRAC) would not be placed as it is on the existing lanes. Alternative 3 would not require GGRAC for any portion of the roadway because it is not needed to hide pavement joints, since no realignment of the existing lane lines are proposed. The Linda Creek Bridge would require widening for the eastbound direction. Only one segment of the existing soundwall in the eastbound direction from KP 1.6 to KP 1.7 will be replaced.

The estimated total construction cost of Alternative 3 is \$11 million, which includes \$0.5 million for ROW costs.

2.1.4 Alternative 4 “No Build”

Alternative 4, the no-build Alternative, would maintain the existing freeway design. In the eastbound direction, the mainline lanes would reduce from five to four at the Riverside Avenue offramp. The mainline lanes would continue to further reduce from four to three lanes near the Riverside Avenue/Auburn Boulevard interchange 1.2km (0.75mi) eastward. The three lane eastbound segment would continue for 1.9km (1.2mi) until a fourth lane is added at the Douglas Blvd. onramp as proposed by the City of Roseville’s Douglas/I-80 project.

2.2 Alternatives Considered and Withdrawn

Caltrans undertook a comprehensive screening process to evaluate alternative freeway configurations in order to choose alternatives that would be given consideration during the environmental review process. Alternatives were selected on their ability to meet the project objectives of improving mobility, relieving congestion, maintaining trip reliability, and enhance the overall safety for motorists along this segment of I-80. In addition, other factors such as cost, environmental impacts, operational efficiency, segment-ability of the project during construction, and maintainability of the built system were considered. Based on this screening process Caltrans identified the previously mentioned “build” alternatives for environmental review. Nevertheless, the following alternatives deserve mention because given different criteria or objectives to meet, these alternatives could be separate, viable projects.

2.2.1 Extend Freeway Improvements Further East on I-80

Early in the alternative screening process an alternative that was carried until just prior to the beginning of the environmental evaluation phase was to extend the improvements to Horseshoe Bar, almost 7.2 km (4.5 miles) east of SR 65. After the traffic analysis was completed, the project development team determined that a greater need for improvement exists within the current proposed limits. This was based on the traffic study conclusions indicating that in the eastbound direction over 50 percent of the traffic will have been diverted either through off ramps or through the SR 65 connector. Conversely in the westbound direction the greatest amount of traffic is added to the freeway just west of the SR 65 connector to I-80.

2.2.2 I-80 Corridor Multi-Modal Strategy

The governing boards of the PCTPA and SACOG provided oversight for the preparation of an I-80 Corridor Investment Strategy (CIS). The I-80 CIS evaluated short and long term views of the transportation network of this corridor. One objective of the I-80 CIS was to list future projects (including the proposed freeway improvement project) along the corridor that would maintain mobility on and nearby the I-80 corridor. According to the CIS, when implemented these projects should aid in easing congestion, encourage ridesharing, provide additional public transit (including heavy/light rail and bus), and make bicycling more convenient and safe.

Expected benefits from these projects include faster trips on the I-80 freeway for users of HOV lanes, decreased transit travel times and increased transit ridership, improved access to centers for employment, as well as more continuous and safer bikeways.

The proposed improvements detailed in the I-80 CIS will be undertaken by several agencies that frequently partner with Caltrans. The partner agencies include but are not limited to the following: Placer County, Sacramento County, various Transportation Management Agencies, City of Rocklin, City of Roseville, City of Citrus Heights, and the City of Sacramento. Through this partnering effort additional improvement projects will be developed on the I-80 corridor that will address multi-modal and transit issues. Therefore, since there are already plans in development, additional analysis of transit or other multi-modal alternatives is not warranted in this environmental document.



Chapter 3 **Affected Environment, Environmental Consequences, and Mitigation Measures**

3.1 Hydrology, Water Quality, Storm Water Runoff

The project area is located within the drainages of the American River in the Sacramento Valley. Average annual precipitation in the project is 56cm (22in), which falls as rain during November through March. Most of the storm water runoff from the project area drains into one of the following three streams: Miners Ravine, Dry Creek, and Cirby Creek. These three streams join and flow west to the Natomas East Main Drainage Canal and finally into the American River near its confluence with the Sacramento River at Discovery Park.

The primary federal law regulating water quality is the Clean Water Act. Section 401 of the Act requires a water quality certification from the State Water Board or Regional Water Board when a project: 1) requires a federal license or permit (a Section 404 permit is the most common federal permit for Department projects), and 2) will result in a discharge to Waters of the United States.

Section 402 of the Act establishes the National Pollutant Discharge Elimination System (NPDES) permit for the discharge of any pollutant (except dredge or fill material) into Waters of the United States. To ensure compliance with Clean Water Act Section 402, the State Water Resources Control Board (SWRCB) has issued a NPDES Statewide Storm Water Permit to regulate storm water discharges from Caltrans properties and activities. The permit regulates storm water discharges from the Caltrans ROW both during and after construction, as well as from existing facilities and operations.

In addition, the SWRCB has issued a construction general permit for most construction activities disturbing an area greater than one acre (0.40 hectare), that are part of a Common Plan of Development exceeding five acres (2.02 hectare) or that have the potential to significantly impair water quality. Some construction activities may require an individual construction permit. All Department projects that are subject to the construction general permit require a Storm Water Pollution Prevention Plan (SWPPP), while all other projects require a Water Pollution Control Program

(WPCP). Subject to Caltrans review and approval, the contractor prepares both the SWPPP and the WPCP. The WPCP and SWPPP identify construction activities that may cause pollutants in storm water and measures to control these pollutants. Since neither the WPCP nor the SWPPP are prepared at this time, Section 3.1.2 will focus on anticipated pollution controls.

Executive Order 11988 (Floodplain Management) directs all federal agencies to refrain from conducting, supporting, or allowing actions in floodplains unless it is the only practicable alternative. The Federal Highway Administration (FHWA) requirements for compliance are outlined in 23 CFR 650 Subpart A. The 100-year floodplain is defined as “the area subject to flooding by the flood or tide having a one percent chance of being exceeded in any given year.” An encroachment is defined as “an action within the limits of the 100-year floodplain.”

3.1.1 Impacts

3.1.1.1 Storm Water

Based on highway storm water runoff data, pollutants that are typically found in highway storm water runoff include: hydrocarbons, metals, microbial agents, nutrients, volatile and semi-volatile organics, pesticides, and herbicides. The project resides within the 519.21 Hydrologic Sub-Area (HSA). Caltrans maintains 103km (64mi) of highway in the 519.21 HSA and contributes an estimated 1.1 percent to the total storm water runoff loads within the HSA. The increased volume of storm water runoff from the added impervious surface for any alternative to the entire HSA is very small. Therefore, the pollutant loads from the project’s traveled way will be negligible and will not have a significant impact on the overall water quality of the receiving waters.

The potential for erosion and increased turbidity and sedimentation exists during and immediately after the construction phase of the project. All of the build alternatives will have the same construction practices and will have the same potential for introducing pollutants into surface waters. To limit any sediments and pollutants from impacting drainages as well as diminish erosion in the project area Best Management Practices (BMPs) will be implemented.

3.1.1.2 Floodplain

According to the Federal Emergency Management Agency (FEMA) maps for this project area, the project passes through two areas where the 100-year base flood elevations have been determined (designated as AE zones by FEMA). The two areas where the floodplain has been determined and where an encroachment will occur are at the Linda Creek Bridge (# 19-0027) and at the Miners Ravine Bridge (# 19-0056). The bridge widening will require the placement of additional bridge support columns, also called bridge bents, in the stream channel at the Linda Creek Bridge and the Miners Ravine Bridge. The current proposed bridge soffit (structure that supports the concrete bridge deck) at Cirby Creek is 3.66m (12ft) above the 100-year floodplain, while the bridge soffit at Miners Ravine is 5.19m (17ft) above the 100-year floodplain.

Excavation of the footing for the columns, if necessary, will require excavation of at least a 3m by 3m (10ft by 10ft) area, to be backfilled when completed. Since realignment of the I-80 bridge structures is not feasible, it is anticipated that the bridge bents will be placed in line with those existing and will result in minor changes in base floodwater surface elevations. In addition, within the project limits a 100-year flood has not been recorded for either Cirby Creek or Miners Ravine. Therefore, this project will not significantly impact the 100-year base floodplain elevations.

3.1.2 Mitigation, Minimization, & Avoidance Measures

Through the implementation of the following standard minimization and avoidance measures, as well as permit conditions, there will not be any significant direct, indirect, short-term, long-term, or unavoidable impacts on hydrology, water quality or stormwater runoff.

1. The designated Caltrans contractor is required to implement BMPs that can be found in the Storm Water Project Planning and Design Guide or in Section 7-1.01 G of the Caltrans Standard Specifications handbook, to ensure there are no significant impacts such as erosion or siltation on or off the project site. Some examples of temporary sediment control BMPs that will be implemented are: silt fences; gravel bag berms; sandbag barriers; straw bale barriers, seeding and other re-vegetation efforts.
2. Caltrans is required to adhere to the conditions of the Caltrans Statewide NPDES Permit CAS # 000003, Order # 99-06-DWQ, issued by the SWRCB and to adhere

to the compliance requirements of the NPDES General Permit CAS # 000002, Order # 99-08-DWQ. The main requirement of the Statewide NPDES permit is to submit a SWPPP, detailed monitoring plan, and notice of construction to the Central Valley Regional Water Quality Control Board (CVRWQCB).

3. Lastly, since the project will be near and in Waters of the United States, special conditions in the Army Corps of Engineers (ACOE) 404 permit, the California Department of Fish and Game (CDFG) 1601 Streambed Alteration Agreement, and CVRWQCB 401 certification will be implemented. Combined these measures will ensure that there will be no impacts that could significantly alter the existing drainage patterns or cause substantial amounts of erosion or siltation within the project limits.

3.2 Hazardous Waste/Materials

Hazardous materials and hazardous wastes are regulated by many state and federal laws. These include not only specific statutes governing hazardous waste, but also a variety of laws regulating air and water quality, human health and land use. The primary federal laws regulating hazardous wastes/materials are the Resource Conservation and Recovery Act of 1976 (RCRA) and the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA). The purpose of CERCLA, often referred to as Superfund, is to clean up contaminated sites so that public health and welfare are not compromised. RCRA provides for “cradle to grave” regulation of hazardous wastes. Other federal laws include:

Community Environmental Response Facilitation Act of 1992

Clean Water Act (CWA)

Clean Air Act (CAA)

Safe Drinking Water Act

Occupational Safety & Health Act

Toxic Substances Control Act

Federal Insecticide, Fungicide, and Rodenticide Act

In addition to the acts listed above, Executive Order 12088, Federal Compliance with Pollution Control, mandates that necessary actions be taken to prevent and control environmental pollution when federal activities or federal facilities are involved.

Hazardous waste in California is regulated primarily under RCRA, and the California Health and Safety Code. Other California laws that affect hazardous waste are

specific to handling, storage, transportation, disposal, treatment, reduction, cleanup and emergency planning. Worker health and safety and public safety are key issues when dealing with hazardous materials that may affect human health and the environment. Proper disposal of hazardous material is vital if it is disturbed during project construction.

3.2.1 Impacts

The hazardous waste assessment included a records search, field review, examination of aerial pictures, and a telephone conversation with Mr. Paul Sanders of the CVRWQCB. Alternative 3 would disturb only 8 of the 16 potentially hazardous waste sites listed in Table 5 and disturb less soil area that may contain aerially deposited lead, as compared to Alternatives 1 and 2. This is due to the smaller construction area for Alternative 3.

3.2.1.1 Soil and Groundwater

All potential and existing listed hazardous waste sites will require further evaluation if any portion of the suspect parcel is to be acquired, or if any excavation deeper than 1.5m (5ft) is proposed to take place immediately adjacent to these areas. Soil and groundwater contaminated with petroleum hydrocarbons may exist within the project limits. The approximate locations of these potential contaminants are in Table 5.

Table 5. Potential & Existing Listed Hazardous Waste Sites

ADDRESS	TYPE OF SITE
21 Whyte Road, Roseville, CA	Small hazardous waste generator
215 Harding Blvd, Roseville, CA	Small hazardous waste gen. + one leaking UST*
212 Harding Blvd, Roseville, CA	One active UST
1505 Eureka Rd, Roseville, CA	One active UST
4450 Rocklin Rd, Roseville, CA	One active + one leaking UST + one small hazardous waste generator
4500 Rocklin Rd, Roseville, CA	One active + one leaking UST
1000 & 1017 Douglas Blvd, Roseville	Soil & groundwater contamination @ 3.9 m & 7.31m bgs**
1139 Douglas Blvd, Roseville, CA	Four active UST
1600 Douglas Blvd, Roseville, CA	Small hazardous waste generator, Four active and one leaking UST
1617 Douglas Blvd, Roseville, CA	Small hazardous waste generator
1632 Douglas Blvd, Roseville, CA	Three active + one leaking UST
251 Sunrise Blvd, Roseville, CA	Five active + one leaking UST
333 Sunrise Blvd, Roseville, CA	Small hazardous waste generator Three active and one leaking UST Soil & groundwater contamination @ 1.8 m & 4.6 m bgs
445 Roseville Rd, Roseville, CA	Three active and one leaking UST
Southwest quadrant of I-80/Douglas Blvd interchange	Contaminated groundwater at depths between 1.8-4.6m (6-15ft) bgs.
Northwest quadrant of I-80/Atlantic Street interchange.	Contaminated groundwater at depths between 3.7-6.1m (12-20ft) bgs.

*UST = Underground Storage Tanks

**bgs-below ground surface

3.2.1.2 Asbestos/Lead Containing Materials

As part of the CAA, and the National Emission Standards for Hazardous Air Pollutants, an Asbestos Containing Materials (ACM's) and lead based paint survey was conducted on each bridge location.

No lead-based paint materials were found at either bridge.

The analysis report found ACMs on the Linda Creek Bridge Metal Beam Guard Rail (MBGR) bearing pad shims. Approximately 28 MBGR shims were found (14 on either side of the structure). The shims measure approximately 18cm (7in) in diameter and are approximately 0.3cm (1/8th in) thick. The bearing pad shims do contain ACM and will require removal and proper disposal by a licensed and certified asbestos abatement contractor.

3.2.1.3 Aerially Deposited Lead

A site investigation was conducted to determine the presence and concentration of aerially deposited lead (ADL) in soil along select portions of the proposed highway project. The results indicated lead in soil samples that is presumably from the historical use of leaded gasoline and the subsequent tailpipe emissions infiltrating into the adjacent highway right-of-way.

Material found to contain average concentrations of total lead greater than or equal to 1000mg/kg or soluble lead greater than or equal to 5 mg/L by the California Waste Extraction Test (WET) is considered hazardous waste according to California standards. In addition, material found to contain average concentrations of soluble lead greater than or equal to 5mg/L by the Toxicity Characteristic Leaching Procedure is considered hazardous waste by Federal/RCRA standards.

Twenty-one of the 82 locations where samples were taken had lead concentrations that exceeded California hazardous waste levels. Three of those 21 locations had concentrations of lead that exceeded Federal hazardous waste levels. Further sampling and testing has been initiated to quantify the extent of lead-contaminated soil and it is likely that some areas may be classified as a California hazardous waste sites requiring use of a Class I Disposal Site for excavated material within those sites.

The proposed project would result in only temporary impacts related to removal and proper disposal of ADL when contaminated soil is encountered during the construction phases.

3.2.2 Mitigation, Minimization, & Avoidance Measures

Through the implementation of the following standard minimization and avoidance measures, as well as permit conditions, there will not be any significant direct, indirect, short-term, long-term or unavoidable impacts to the environment from encountering any known or unknown hazardous waste sites or hazardous materials.

1. The Linda Creek Bridge bearing pad shims will require removal and proper disposal by a licensed and certified asbestos abatement contractor in conjunction with the planned bridge widening. In order to complete the necessary asbestos abatement/removal, a Placer County Air Pollution Control District (PCAPCD) permit for the Linda Creek Bridge and a certification for the Miners Ravine

Bridge will be attained. The Resident Engineer will contact the PCAPCD at least 3 months prior to construction.

2. Project features in potential conflict with contaminated soil/groundwater should be eliminated or moved if possible. If conflicts cannot be eliminated, then the handling of the contaminated material will be addressed under a lead compliance plan prepared by the contractor prior to construction activities. Soils containing hazardous levels of ADL will be excavated and disposed of at a Class 1 Disposal Facility or a Class 2 Disposal Facility permitted by the CVRWQCB before completion of the proposed project.
3. In the event suspected contaminated materials are encountered the Contractor shall stop work in the affected area and notify the Resident Engineer immediately. The Contractor, or the Contractor's listed environmental sub-contractor, shall prepare, and submit for approval, a Site Safety Plan consistent with the requirements of 29 Code of Federal Regulations 1910.120. The contractor shall be required to comply with the provisions of the approved Site Safety Plan during construction.

3.3 Air Quality

The Federal Clean Air Act, as amended in 1990, and the California Clean Air Act of 1988 are laws that govern air quality and set standards for the quantity of air pollutants. At the federal level, these standards are called National Ambient Air Quality Standards (NAAQS) and at the State level are called the California Ambient Air Quality Standards (CAAQS). Standards have been established for carbon monoxide (CO), nitrogen dioxide (NO₂), Ozone (O₃) and particulate matter that is 10 microns in diameter or smaller (PM₁₀). These are the pollutants of concern for transportation projects.

Under the 1990 Clean Air Act Amendments, the U.S. Department of Transportation cannot fund, authorize, or approve Federal actions to support programs or projects that do not conform to the CAA requirements. Conformity with the CAA takes place on two levels—first, at the regional level and second, at the project level. The proposed project must conform at both levels to be approved.

Regional level conformity is concerned with how well the region is meeting the standards set for the pollutants listed above. A Regional Transportation Plan (RTP), or as in this case, a Metropolitan Transportation Plan (MTP) is developed that includes all of the transportation projects planned for a region over a period of years, usually 20. Based on the projects included in the MTP, an air quality model is run to determine whether or not the implementation of those projects would result in any violation of the CAA. If no violations would occur, then the metropolitan planning organization (Sacramento Area Council Of Governments, or SACOG) and the appropriate federal agencies, such as the Federal Highway Administration, make the determination that the MTP is in conformity with the CAA. Otherwise, the projects in the MTP must be modified until conformity is demonstrated. If the design and scope of a proposed transportation project is the same as described in the MTP, then the proposed project is deemed to be in conformity at the regional level.

Conformity at the project-level is also required. Again the pollutants of concern are: CO, NO₂, O₃ and PM₁₀. If a region is meeting the standard for a given pollutant, then the region is said to be in “attainment” for that pollutant. If the region is not meeting the standard, then it is designated a “non-attainment” area for that pollutant. Areas that were previously designated as non-attainment areas but have recently met the standard are called “maintenance” areas. If a project is located in a non-attainment or maintenance area for a given pollutant, then additional air quality analysis in regard to

that pollutant are required for the project level analysis. This is most frequently done for CO and PM₁₀, which are generally regarded as the only pollutants that have localized impacts.

3.3.1 Air Quality Jurisdictions and Planning

Authority for air quality regulation and planning is divided. In California air pollution control districts and air quality management districts have full regulatory authority for achieving State and Federal standards, but that authority is limited to regulation of non-vehicular sources of pollution. Regulation of vehicular sources of pollution falls under authority of the California Air Resources Board (CARB). In Placer and Sacramento Counties, the Placer County Air Pollution Control District (PCAPCD) and the Sacramento Metropolitan Air Quality Management District (SMAQMD), respectively, are the local regulatory authorities. For planning purposes under Federal and State law, the responsible agency has been designated as SACOG. Federal and State air quality laws require identification of areas not meeting the NAAQS or the CAAQS. These areas must develop regional air quality plans designed to attain the standards. Under Federal law, the plans are referred to as State Implementation Plans (SIP). In California, the SIP is a compilation of regional air quality plans prepared for the MTPs or RTPs from throughout the State, and is organized and submitted to the Environmental Protection Agency (EPA) by CARB.

3.3.2 Analysis

The proposed freeway improvements are located in the west portion of Placer County and northeast portion of Sacramento County; both counties are located within the Sacramento Valley Air Basin. Under the NAAQS Placer County is designated as an attainment area for CO, NO₂, and PM₁₀, but a severe non-attainment area for O₃. Sacramento County is designated as an attainment area for CO and NO₂, but is a severe non-attainment area for O₃ and moderate non-attainment for PM₁₀. Under the CAAQS, both Placer and Sacramento Counties are currently designated as in attainment for CO and non-attainment for both O₃ and PM₁₀. See Figure 3 for CAAQS and NAAQS standards.

Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards ¹		Federal Standards ²		
		Concentration ³	Method ⁴	Primary ^{3,5}	Secondary ^{3,6}	Method ⁷
Ozone (O ₃)	1 Hour	0.09 ppm (180 µg/m³)	Ultraviolet Photometry	0.12 ppm (235 µg/m³) ⁸	Same as Primary Standard	Ethylene Chemiluminescence
	8 Hour	—		0.08 ppm (157 µg/m³)		
Respirable Particulate Matter (PM ₁₀)	Annual Geometric Mean	30 µg/m³	Size Selective Inlet Sampler ARB Method P (8/22/85)	—	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	24 Hour	50 µg/m³		150 µg/m³		
	Annual Arithmetic Mean	—		50 µg/m³		
Fine Particulate Matter (PM _{2.5})	24 Hour	No Separate State Standard		65 µg/m³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean			15 µg/m³		
Carbon Monoxide (CO)	8 Hour	9.0 ppm (10 mg/m³)	Non-dispersive Infrared Photometry (NDIR)	9 ppm (10 mg/m³)	None	Non-dispersive Infrared Photometry (NDIR)
	1 Hour	20 ppm (23 mg/m³)		35 ppm (40 mg/m³)		
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m³)		—		
Nitrogen Dioxide (NO ₂)	Annual Arithmetic Mean	—	Gas Phase Chemiluminescence	0.053 ppm (100 µg/m³)	Same as Primary Standard	Gas Phase Chemiluminescence
	1 Hour	0.25 ppm (470 µg/m³)		—		
Lead	30 days average	1.5 µg/m³	AIHL Method 54 (12/74) Atomic Absorption	—	—	High Volume Sampler and Atomic Absorption
	Calendar Quarter	—		1.5 µg/m³	Same as Primary Standard	
Sulfur Dioxide (SO ₂)	Annual Arithmetic Mean	—	Fluorescence	0.030 ppm (80 µg/m³)	—	Pararosaniline
	24 Hour	0.04 ppm (105 µg/m³)		0.14 ppm (365 µg/m³)	—	
	3 Hour	—		—	0.5 ppm (1300 µg/m³)	
	1 Hour	0.25 ppm (655 µg/m³)		—	—	
Visibility Reducing Particles	8 Hour (10 am to 6 pm, PST)	In sufficient amount to produce an extinction coefficient of 0.23 per kilometer—visibility of ten miles or more (0.07—30 miles or more for Lake Tahoe) due to particles when the relative humidity is less than 70 percent. Method: ARB Method V (8/18/89).		No Federal Standards		
Sulfates	24 Hour	25 µg/m³	Turbidimetric Barium Sulfate-AIHL Method 61 (2/76)			
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m³)	Cadmium Hydroxide STRactan			

Figure 3. Ambient Air Quality Standards (both Federal and State).

1. California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, suspended particulate matter—PM₁₀, and visibility reducing particles, are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

In addition, Section 70200.5 lists vinyl chloride (chloroethene) under “Ambient Air Quality Standards for Hazardous Substances.” In 1978, the California Air Resources Board (ARB) adopted the vinyl chloride standard of 0.010 ppm (26 µg/m³) averaged over a 24-hour period and measured by gas chromatography. The standard notes that vinyl chloride is a “known human and animal carcinogen” and that “low-level effects are undefined, but are potentially serious. Level is not a threshold level and does not necessarily protect against harm. Level specified is lowest level at which violation can be reliably detected by the method specified. Ambient concentrations at or above the standard constitute an endangerment to the health of the public.”

In 1990, the ARB identified vinyl chloride as a Toxic Air Contaminant and determined that there was not sufficient available scientific evidence to support the identification of a threshold exposure level. This action allows the implementation of health-protective control measures at levels below the 0.010 ppm ambient concentration specified in the 1978 standard.

2. National standards (other than ozone, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest eight hour concentration in a year, averaged over three years, is equal to or less than the standard. For PM₁₀, the 24 hour standard is attained when 99 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. For PM_{2.5}, the 24 hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact U.S. EPA for further clarification and current federal policies.
3. Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 mm of mercury. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 mm of mercury (1,013.2 millibar); ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.
4. Any equivalent procedure which can be shown to the satisfaction of the ARB to give equivalent results at or near the level of the air quality standard may be used.
5. National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.
6. National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.
7. Reference method as described by the EPA. An “equivalent method” of measurement may be used but must have a “consistent relationship to the reference method” and must be approved by the EPA.
8. New federal 8-hour ozone and fine particulate matter standards were promulgated by U.S. EPA on July 18, 1997. The federal 1-hour ozone standard continues to apply in areas that violated the standard. Contact U.S. EPA for further clarification and current federal policies.

Air quality impacts are generally assessed using one of two scales of examination: regional and project specific. The transport, dispersion, and chemical transformation for particular pollutants dictate the type of analysis that is appropriate. Automobiles on transportation facilities as a whole make significant contributions to regional air quality problems. The impacts that result from the implementation of a single transportation project typically do not. The project specific region is defined as the area within approximately 300m (approximately 1,000ft) of the transportation facility, while the regional area is the air basin, including the project locale.

Direct emissions from internal combustion engines contain mainly hydrocarbons, NO₂, and CO. Indirect emissions include PM₁₀ and O₃. Ozone is formed when Nitrogen Oxides (NO_x) and Reactive Organic Gases (ROG), a small subset of Volatile Organic Compounds (VOC), react in the presence of sunlight. PM₁₀ emissions from vehicular sources are due to aerosols formed in the atmosphere from NO_x and ROG, as well as from vehicle travel over materials previously deposited on the travel surface, or tire and brake wears. Due to their formation and dispersion patterns hydrocarbons, NO₂, O₃ and PM₁₀ can only be reasonably examined from a regional perspective. However, section 93.116 of the federal transportation conformity rule states that any project level conformity determinations in a PM₁₀ non-attainment or maintenance area must document that no new local violations will be created or the severity of existing violations will not be increased as a result of the project. PM₁₀ will be examined at the project specific level for this project, since Sacramento County is designated as a non-attainment area for that pollutant. CO is a relatively stable pollutant with major concentrations measured adjacent to roadways, and therefore will also be studied on the project specific level.

3.3.2.1 Regional Analysis

Before adopting the MTP and the subsequent Metropolitan Transportation Improvement Plan (MTIP), SACOG performed a quantitative analysis to determine if implementation of the set of projects included in these documents would result in violations of the O₃ and PM₁₀ air quality standard. Based on this analysis, SACOG has concluded that implementing the set of projects included in the MTP and MTIP would not result in a violation of the O₃ standard and would result in reduction of PM₁₀ emission and therefore will not have an impact on the regional air quality problems faced by either Sacramento or Placer County. The proposed project is a component of the set of projects included in the MTP and MTIP. The MTIP conforms to the SIP. Therefore, the project is found to be in conformity with the SIP.

This conformity determination confirms that the operational emissions from the proposed project will not have an adverse impact on air quality.

3.3.2.2 Project Specific Analysis

Carbon Monoxide

Carbon Monoxide is considered to have the greatest potential for localized impacts related to transportation facilities. High concentrations of CO are typically localized and are a result of automobiles on congested roadway facilities. This CO analysis focused on the locations considered to have the greatest potential for high CO concentrations to occur. These areas, called receptors, are adjacent to the highway and are located near areas of human use typically within the backyards of residences and within parking areas for business along I-80. The CARB monitoring station located at North Sunrise Boulevard in Roseville was used as a representative for background CO information. The background data generated by the aforementioned CARB station was then inputted into the CALINE 4 computer model software to estimate the average CO concentrations at the receptor locations. CALINE 4 is recognized by the SMAQMD and the PCAPCD as an acceptable planning tool for analyzing project specific CO concentrations. The model was then run for the years 2006, 2016, and 2026 for all the alternatives. For exact locations of the receptors please see Figures 4a-4f.

The CALINE 4 computer model produced the following results for maximum 1-hour and maximum 8-hour CO concentrations within the project limits:

- Under the no-build conditions, the highest 1-hour CO values for the model years 2006, 2016, and 2026 (the same model years were used for all alternatives) are 8.9 parts per million (ppm), 8.2 ppm, and 8.6 ppm respectively; the highest 8-hour values are 6.2 ppm, 5.7 ppm, and 6.0 ppm, respectively.
- For Alternative 1, the highest 1-hour CO output values were 8.8 ppm, 7.7 ppm, and 6.9 ppm; and the highest 8-hour values were 6.2 ppm, 5.4 ppm, and 4.8 ppm, respectively.
- For Alternative 2, the highest 1-hour CO output values were 8.8 ppm, 7.2 ppm, and 7.2 ppm; and the highest 8-hour values were 6.2 ppm, 5.0 ppm, and 5.0 ppm, respectively.
- For Alternative 3, the highest 1-hour CO output values were 8.4 ppm, 6.2 ppm, and 6.1 ppm; and the highest 8-hour values were 5.9 ppm, 4.3 ppm, and 4.3 ppm, respectively.

The results of all Build alternatives were lower than both Federal and State air quality standards, any impacts from CO emissions resulting from this project is considered less than significant.

Figure 4a. Air Quality Receptors near Riverside Avenue

Figure 4b. Air Quality Receptors near Cirby Way

Figure 4c. Air Quality Receptors near Douglas Boulevard

Figure 4d. Air Quality Receptors near Lead Hill/Eureka Road

Figure 4e. Air Quality Receptors near Taylor Road

Figure 4f. Air Quality Receptors near SR 65

PM₁₀

As previously mentioned Sacramento County is federally designated as a non-attainment area for PM₁₀ under the NAAQS. In addition, both Sacramento and Placer counties are designated as non-attainment areas for PM₁₀ under the CAAQS.

Based on PM₁₀ monitoring records of the SMAQMD at the North Highland-Blackfoot Way monitoring station near the proposed project area, the primary Federal 24-hour standard of 150ug/m³ is not being exceeded. However, both counties are currently exceeding the CAAQS 24-hour 50ug/ m³. Although this project is located in CAAQS non-attainment areas for PM₁₀ the proposed freeway improvements will not affect current levels of this pollutant for the following reasons. First, the project is located in a climate zone that does not require winter sanding operations for snow control. Second, the area does not have unpaved loose roadway shoulders. Third, Alternatives 1 through 3 will relieve current traffic congestion that generates larger amounts NO_x and ROG in the atmosphere that can lead to additional PM₁₀ emissions than traffic under free flow conditions. Lastly, the project's build alternatives will not cause a substantial increase in large truck traffic because it will not serve to provide any additional access to industrial truck traffic generators. As a result, there will not be any substantial changes to diesel emissions in the project area.

Construction Analysis

On the project level analysis, the proposed project may generate short-term construction-related air emissions, including fugitive dust, also known as PM₁₀ and exhaust emissions from construction equipment (typically run by diesel engines) that include CO, NO_x, and ROG. Both fugitive dust and construction equipment exhaust emissions would be temporary and transitory in nature. Sacramento County is in non-attainment under both State and Federal standards for PM₁₀ and O₃. Therefore, the SMAQMD is vitally interested in reducing those pollutants and their precursor elements. Accordingly, the SMAQMD has developed a framework for assessing and mitigating short-term, localized, construction-related emissions.

This SMAQMD framework is comprised of three general elements. First, SMAQMD has established CEQA thresholds of significance for some pollutants. These thresholds are used by the air district to help determine the significance of air quality impacts arising from proposed projects, typically during SMAQMD's review of environmental documents. Second, with regard to road construction projects, SMAQMD has generated a model, currently called Road Construction 5.1, that can

be used by the project reviewers to determine whether emissions from the proposed project will exceed the various thresholds. Finally, SMAQMD has compiled a list of mitigation measures that can be implemented, especially if the thresholds are likely to be exceeded in order to reduce emissions.

Caltrans has serious reservations concerning the legal and scientific foundation for each of these three elements. In particular, Caltrans cannot agree to adopt the SMAQMD thresholds of significance. Nevertheless, in light of the history of this project, and in an effort to move the project forward, Caltrans has decided to utilize the SMAQMD framework to evaluate the project's impacts. This decision should not be interpreted as an acknowledgement that Caltrans is legally obligated to employ the SMAQMD framework for air quality analysis of construction related emissions.

SMAQMD Air Quality Analysis Framework Conclusions

Tables 6 and 7 show the results of the Road Construction 5.1 model simulation for the "maximum disturbed area". The maximum disturbed area is the area of the improvements (e.g. paved area) plus the area adjacent to the improvements that the construction equipment traveled in order to complete the day's work. This maximum estimated value is for infrequent and extraordinary construction situations. Average daily operations would yield emissions that are considerably lower. Nevertheless, Alternatives 1 through 3 produce emissions that are within the road construction emission budgets for the following pollutants: ROG and NO_x. According to the mass emission thresholds listed on the SMAQMD website (web address: <http://www.airquality.org/ceqa/index.shtml>) for short-term construction effects there is no set threshold for ROG, yet the SMAQMD has chosen to use an 85lbs/day threshold for NO_x. Phase II of Alternatives 1 and 2 would not exceed the emissions budgets primarily because construction fleet turnover. That is, by the 2009 start date of construction for Phase II, there is an assumption built into the model that the approved construction contractor's fleet of equipment would be newer, with cleaner burning engines, due to the need to replace older mechanically defective vehicles. In addition, Phase II cannot begin until the Douglas Boulevard interchange improvements are complete (see Section 4.2 for discussion of aforementioned project).

Table 6. Emissions Estimates for Alternative 3 or Phase I of Alternatives 1 and 2 using SMAQMD's Road Construction Model 5.1.

					Exhaust	Fugitive Dust
Project Phases (English Units)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	PM10 (lbs/day)	PM10 (lbs/day)	PM10 (lbs/day)
Grubbing/Land Clearing	10	47	56	18	3	15
Grading/Excavation	11	59	68	18	4	15
Drainage/Utilities/Sub-Grade	10	53	59	18	4	15
Paving	5	25	36	2	2	0
Maximum (pounds/day)	11	59	68	18	4	15
Total (tons/construction project)	1	3	4	1	0	1
Notes: Project Start Year ->	2006					
Project Length (months) ->	6					
Total Project Area (acres) ->	8					
Maximum Area Disturbed/Day (acres) ->	3					
Total Soil Imported/Exported (yd3/day)->	300					

PM10 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Table 7. Emissions Estimates for Phase II of Alternatives 1 and 2 using SMAQMD's Road Construction Model 5.1.

					Exhaust	Fugitive Dust
Project Phases (English Units)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	PM10 (lbs/day)	PM10 (lbs/day)	PM10 (lbs/day)
Grubbing/Land Clearing	15	59	62	19	4	15
Grading/Excavation	17	72	80	19	5	15
Drainage/Utilities/Sub-Grade	16	59	62	19	4	15
Paving	11	43	46	3	3	0
Maximum (pounds/day)	17	72	80	19	5	15
Total (tons/construction project)	4	14	20	4	1	3
Notes: Project Start Year ->	2009					
Project Length (months) ->	24					
Total Project Area (acres) ->	26					
Maximum Area Disturbed/Day (acres) ->	3					
Total Soil Imported/Exported (yd3/day)->	600					

PM10 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

3.3.3 Mitigation, Minimization, & Avoidance Measures

There will not be any long-term, short-term, direct, indirect or unavoidable impacts from the project on existing or projected levels of the following pollutants: CO, NO₂, and O₃.

There may be some short-term direct impacts on PM₁₀ levels as a result of construction of this project. Caltrans controls construction-related air pollutant emissions via standard specifications and special provisions. The standard specifications that relate directly to air quality are Section 7-1.01F, “Air Pollution Control”, and Section 10, “Dust Control”. These standard specifications require that construction equipment and practices conform to applicable local regulations in force at the time of construction and include applicable PCAPCD rules as well as the SMAQMD rule numbers: 201, 403, 442, 453, 460, 701, 902, 1002, and 1003. In addition, portable equipment must meet either air district or statewide registration or permitting standards. Requiring the contractor to use BMPs (such as those listed below) and comply with Caltrans Standard Specifications, will mitigate the temporary construction-related emission impacts to less than significant levels.

Air pollution control and dust control BMPs include but are not limited to the following:

1. Water all active construction areas at least twice daily.
2. Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least two feet of freeboard (i.e. the minimum required space between the top of the load and the top of the trailer).
3. Sweep daily all paved access roads, parking areas, and staging areas at construction sites.
4. Hydro-seed or apply non-toxic soil stabilizers to inactive construction areas that are inactive for ten days or more.
5. Enclose, cover, or water twice daily, exposed stockpiles of dirt or sand.
6. Limit truck speeds to 15mph in the area under construction.
7. Reduce the idle time of off road construction equipment.

3.4 Noise

CEQA provides a broad basis for analyzing and abating highway traffic noise effects. The intent of this law is to promote the general welfare and to foster a healthy environment.

For highway transportation projects with FHWA involvement, the Federal-Aid Highway Act of 1970 and the associated implementing regulations (23 CFR 772) govern the analysis and abatement of traffic noise impacts. The regulations require that potential noise impacts in areas of frequent human use be identified during the planning and design of a highway project. The regulations contain noise abatement criteria (NAC) that are used to determine when a noise impact would occur. The NAC differ depending on the type of land use under analysis. For example, the NAC for residences (67 decibels [dba]) is lower than the NAC for commercial areas (72 dba). Table 8 lists the noise abatement criteria.

Table 8. Noise Abatement Criteria decibal levels

Activity Category	NAC, Hourly A-Weighted Noise Level, dba $L_{eq}(h)$	Description of Activities
A	57 Exterior	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose
B	67 Exterior	Picnic areas, recreation areas, playgrounds, active sport areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals.
C	72 Exterior	Developed lands, properties, or activities not included in Categories A or B above
D	--	Undeveloped lands.
E	52 Interior	Residence, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums

In accordance with the Department's Traffic Noise Analysis Protocol for New Highway Construction and Reconstruction Projects, October 1998, a noise impact occurs when the future noise level with the project results in a substantial increase in noise level (defined as a 12dba or more increase) or when the future noise level with the project approaches or exceeds the NAC. Approaching the NAC is defined as coming within 1 dba of the NAC.

If it is determined that the project will have noise impacts, then potential abatement measures must be considered. Noise abatement measures that are determined to be reasonable and feasible at the time of final design are incorporated into the project plans and specifications. This document discusses noise abatement measures that may be incorporated into the project.

The Department's Traffic Noise Analysis Protocol sets forth the criteria for determining when an abatement measure is reasonable and feasible. A minimum 5dba reduction in the future noise level must be achieved for an abatement measure to be considered feasible. Other considerations include topography, access requirements, other noise sources, safety considerations, residents acceptance, the absolute noise level, build versus existing noise, environmental impacts of abatement, public and local agencies input, newly constructed development versus development pre-dating 1978 and the cost per benefitted residence. Noise abatement, in the form of a Noise Barrier (NB), is not considered reasonable at isolated residences on large lots adjacent to I-80 because the maximum monetary allowance for a single residence is between \$32,000 and \$37,000, and that amount would be insufficient for an acoustically feasible wall.

The amplitude of sound determines its loudness. Loudness of sound increases and decreases with increasing and decreasing amplitude. Sound pressure amplitude is measured in units of micro-Newton's per square meter (N/m^2). Because expressing sound levels in terms of N/m^2 is rare to all except noise specialists, Sound Pressure Level (SPL) is used to describe in logarithmic units the ratio of actual sound pressures to a reference pressure squared. These units are called bels, named after Alexander Graham Bell. A bel is divided into 10 decibels. Because dba are logarithmic units, SPL cannot be added or subtracted by ordinary mathematical means. As an example; if one automobile produces an SPL of 70dba when it passes an observer, two cars passing simultaneously would not produce 140dba; rather they would combine to produce only 73dba. That is, when two sounds of equal SPL are combined, they generate a SPL 3dba greater than the individual SPL. Simply put, sound energy must

be doubled to create a 3dba increase in sound. If two sound levels differ by 10dba or more, the combined SPL is equal to the higher SPL, the lower sound level would not increase the higher sound level.

Under controlled laboratory conditions, the healthy human ear is able to discern a 1dba change in sound levels when exposed to a steady, single frequency signals in the mid frequency range. Outside the laboratory, the trained ear can detect 2dba changes in normal environmental noise. However, it is widely accepted that the average healthy ear can barely perceive a 3dba change in SPL. A 5dba change is readily perceptible, and a 10dba change is perceived as being twice or half as loud. As discussed above, doubling sound energy results in a 3dba increase in sound. Therefore if the volume of traffic were to double on the highway, i.e. doubling sound energy, the result would be a barely perceptible change in the existing noise level.

3.4.1 Affected Environment

Land uses potentially subject to traffic noise impacts include single-family and multifamily residences, schools, churches, parks/open space areas, motels, and commercial businesses. Frequent human use is considered to occur at exterior locations in which people are exposed to highway noise for 1 hour or more on a regular basis. Impacts are typically assessed at residential locations with defined outdoor activity areas (e.g., backyards and patios) and parks with defined activity areas (e.g., playgrounds and picnic tables) that are not currently protected by existing Caltrans noise barriers.

3.4.2 Impacts

A field noise investigation was conducted to quantify existing noise conditions while noise-modeling software (Sound32) was used to evaluate traffic-noise for design-year (2026) conditions. Table's 10a, 10b, and 10c summarize the traffic noise modeling results respectively. As indicated in the table's, predicted traffic noise impacts using Federal Highway Administration (FHWA) noise abatement thresholds show barely perceptible noise increases of 1 to 2dba.

However since the existing noise levels within the project area are already approaching and/or exceeding the FHWA thresholds a detailed impact and abatement assessment was conducted in three primary areas in the project vicinity (see figures 5a-5f for noise modeling and measurement locations):

- **Area 1:** the Tabernacle Baptist Church and the Stonegate Mobile Home Park located north of I-80 and west of Riverside Avenue. * *The results of Table 10a show a decrease in decibel levels over the existing noise levels because the modeling took into account the use of gap graded rubberized asphalt concrete in the vicinity of the church and mobile home park if Alternatives 1 or 2 were chosen. In addition, noise barrier NB-3, which will be implemented under Alternative 1 and 2 was also considered in the modeling process.*
- **Area 2:** the residential subdivision in Roseville located north of I-80 just west of Douglas Boulevard.
- **Area 3:** the residential subdivision in Rocklin located north of I-80 east of SR 65.

The single isolated residences located at 805 Marlin Drive and at the end of Elisa Way were also assessed. Several parks and open space areas are also located in the project area. Only Woodside Park in Rocklin was identified as having areas of frequent human use that would benefit from a lowered noise level.

No commercial land uses in the project area have outdoor activity areas with frequent human use that would benefit from a lowered noise level. Therefore, traffic noise impacts are not evaluated in detail for commercial land uses in the project area, and impacts are not considered to occur at those locations.

3.4.2.1 Construction Impacts

During construction of the project, noise from construction activities may intermittently dominate the noise environment in the immediate area of construction. Table 9 summarizes noise levels produced by construction equipment commonly used on roadway-construction projects. Construction equipment is expected to generate noise levels ranging from 70 to 90dba at a distance of 15m (50ft). Noise produced by construction equipment would be reduced over distance at a rate of about 6dba per doubling of distance. Therefore a Scraper that registers a noise level of 89dba at 15m (50ft) would only generate 83dba of noise at 30m (100ft).

Table 9. Construction Equipment Noise

Equipment	Maximum Noise Level (dba at 15 meters [50 feet])
Scrapers	89
Bulldozers	85
Heavy Trucks	88
Backhoe	80
Pneumatic Tools	85
Concrete Pump	82

Source: Federal Transit Administration 1995.

No adverse noise impacts from construction are anticipated because construction would be conducted in accordance with Caltrans' standard specifications and would be short-term, intermittent, and dominated by local traffic noise. Further, implementation of the measures in Section 3.4.3 would minimize temporary noise impacts from construction.

3.4.2.2 Reflective Noise

A comment was received from the City of Rocklin during the circulation of the Notice of Preparation regarding "bounce back" noise. That is, the city felt that "The EIR should evaluate increased noise levels associated with the proposed project, including the "bounce back" phenomena that occurs when you place a barrier on one side of the roadway and the noise gets bounced off of the barrier back onto the other side of the roadway, resulting in higher noise levels on that side" (see Section 6.2.1 for the City of Rocklin response letter). The bounce back phenomena, also known as reflective noise, does create the possibility of potential increased noise levels at receivers on the opposite side of I-80. Currently, the FHWA/Caltrans noise prediction model (FHWA-RD-77-108) does not have the capacity to predict reflective noise. From the fundamentals of sound, a doubling of acoustical energy, i.e. the doubling of traffic noise due to reflection, would result in at most a 3dba increase. However, given the environment around I-80 and the material used in creating noise barriers, it is not reasonable to assume that 100 percent of the noise can be reflected. As a result any potential increase in noise is anticipated to be less than 2.5dba. Therefore, any change in noise levels on the side of I-80 opposite of a noise barrier would be barely perceptible.

Table 10a. Summary of Traffic Noise Modeling Results at Area 1

Receiver	Location	Type of Development	Units Represented	Activity Category NAC (dba-L[h])	Existing Worst Noise Hour Noise Level (dba-Leq[h])	Predicted Worst Noise Hour Noise Level (dba-Leq[h])			Noise Increase (dba)			Impact Type ^b		
						Alt. 1	Alt. 2	Alt. 3	Alt. 1	Alt. 2	Alt. 3 ^c	Alt. 1	Alt. 2	Alt. 3
1	Tabernacle Baptist	Church/school	NA	B (67)	76	71	72	76	-5	-4	0	A/E	A/E	A/E
2 (M)	Tabernacle Baptist	Church/school	4 ^d	B (67)	74	69	70	74	-5	-4	0	A/E	A/E	A/E
3 (L)	Tabernacle Baptist	Church/school	4 ^d	B (67)	74	69	70	74	-5	-4	0	A/E	A/E	A/E
4 (N)	Stonegate Mobile Home	Residence	4	B (67)	72	67	68	72	-5	-4	0	A/E	A/E	A/E
5	Stonegate Mobile Home	Residence	9	B (67)	72	67	68	72	-5	-4	0	A/E	A/E	A/E
6 (O)	Stonegate Mobile Home	Residence	10	B (67)	72	67	68	72	-5	-4	0	A/E	A/E	A/E
7	Stonegate Mobile Home	Residence	7	B (67)	72	67	67	72	-5	-5	0	A/E	A/E	A/E
8	Stonegate Mobile Home	Residence	6	B (67)	72	67	68	72	-5	-4	0	A/E	A/E	A/E
9	Stonegate Mobile Home	Residence	4	B (67)	73	67	68	73	-6	-5	0	A/E	A/E	A/E
10	Stonegate Mobile Home	Residence	4	B (67)	72	67	68	72	-5	-4	0	A/E	A/E	A/E
12	Stonegate Mobile Home	Residence	4	B (67)	70	65	66	70	-5	-4	0	None	None	None
13	Stonegate Mobile Home	Residence	5	B (67)	71	66	66	71	-5	-4	0	A/E	A/E	A/E
14	Stonegate Mobile Home	Residence	6	B (67)	71	66	67	71	-5	-4	0	A/E	A/E	A/E
15	Stonegate Mobile Home	Residence	5	B (67)	71	66	67	71	-5	-4	0	A/E	A/E	A/E
16	Stonegate Mobile Home	Residence	8	B (67)	71	66	67	71	-5	-4	0	A/E	A/E	A/E
17	Stonegate Mobile Home	Residence	8	B (67)	71	65	66	71	-6	-5	0	None	None	None
18	Stonegate Mobile Home	Residence	4	B (67)	70	65	65	70	-5	-5	0	A/E	A/E	A/E

*A/E in the impact type means that the noise abatement criterion was approached or exceeded

Table 10b. Summary of Traffic Noise Modeling Results at Area 2

Receiver	Location	Type of Development	Units Represented	Activity Category NAC (dba-L[h])	Existing Worst Noise Hour Noise Level (dba-Leq[h])	Predicted ^a Worst Noise Hour Noise Level (dba-Leq[h])			Noise Increase (dba)			Impact Type ^b		
						Alt. 1	Alt. 2	Alt. 3	Alt. 1	Alt. 2	Alt. 3	Alt. 1	Alt. 2	Alt. 3
1	Roseville subdivision	Residence	1	B (67)	62	62	63	62	0	1	0	None	None	None
2	Roseville subdivision	Residence	3	B (67)	61	61	61	61	0	0	0	None	None	None
3 (H)	309 Marion Way	Residence	1	B (67)	65	66	66	65	1	1	0	A/E	A/E	none
4	Roseville subdivision	Residence	1	B (67)	66	66	67	66	0	1	0	A/E	A/E	A/E
5	Roseville subdivision	Residence	4	B (67)	62	62	63	62	0	1	0	None	None	None
6	Roseville subdivision	Residence	1	B (67)	64	64	65	64	0	1	0	None	None	None
7	Roseville subdivision	Residence	1	B (67)	65	66	67	65	1	2	0	A/E	A/E	A/E

Table 10c. Summary of Traffic Noise Modeling Results at Area 3

Receiver	Location	Type of Development	Units Represented	Activity Category NAC (dba-L[h])	Existing Worst Noise Hour Noise Level (dba-Leq[h])	Predicted ^a Worst Noise Hour Noise Level (dba-Leq[h])			Noise Increase (dba)			Impact Type ^b		
						Alt. 1	Alt. 2	Alt. 3	Alt. 1	Alt. 2	Alt. 3	Alt. 1	Alt. 2	Alt. 3
1	Rocklin subdivision	Residence	1	B (67)	66	66	66	66	0	0	0	A/E	A/E	A/E
2 (A)	5965 Aspen Court	Residence	2	B (67)	67	68	68	67	1	1	0	A/E	A/E	A/E
3	Rocklin subdivision	Residence	4	B (67)	65	66	66	66	1	1	1	A/E	A/E	A/E
4 (D)	6049 Kingwood Drive	Residence	4	B (67)	67	68	68	67	1	1	0	A/E	A/E	A/E
5	Rocklin subdivision	Residence	2	B (67)	64	65	65	64	1	1	0	None	None	None
6	Rocklin subdivision	Residence	2	B (67)	61	62	62	62	1	1	1	None	None	None
7	Rocklin subdivision	Residence	1	B (67)	63	63	63	63	0	0	0	None	None	None
8	Rocklin subdivision	Residence	1	B (67)	66	67	67	67	1	1	1	A/E	A/E	A/E
9	Rocklin subdivision	Residence	2	B (67)	62	63	63	62	1	1	0	None	None	None
10 (B)	3630 Woodglade	Residence	1	B (67)	68	69	69	68	1	1	0	A/E	A/E	A/E

Receiver	Location	Type of Development	Units Represented	Activity Category NAC (dba-L[h])	Existing Worst Noise Hour Noise Level (dba-Leq[h])	Predicted ^a Worst Noise Hour Noise Level (dba-Leq[h])			Noise Increase (dba)			Impact Type ^b		
						Alt. 1	Alt. 2	Alt. 3	Alt. 1	Alt. 2	Alt. 3	Alt. 1	Alt. 2	Alt. 3
11 (C)	Woodside Park	park	8 ^c	B (67)	67	68	68	68	1	1	1	A/E	A/E	A/E
12 (E)	3258 Westwood Drive	Residence	1	B (67)	66	67	67	67	1	1	1	A/E	A/E	A/E
13	Rocklin subdivision	Residence	6	B (67)	67	68	68	68	1	1	1	A/E	A/E	A/E
14 (G)	3168 Westwood Drive	Residence	6	B (67)	67	67	68	67	0	1	0	A/E	A/E	A/E
15	Rocklin subdivision	Residence	4	B (67)	67	68	68	68	1	1	1	A/E	A/E	A/E
16	Rocklin subdivision	Residence	2	B (67)	67	67	68	67	0	1	0	A/E	A/E	A/E
17	Rocklin subdivision	Residence	1	B (67)	62	63	63	63	1	1	1	None	None	None
18	Rocklin subdivision	Residence	1	B (67)	60	61	61	60	1	1	0	None	None	None
19 (F)	6595 Woodcrest Court	Residence	1	B (67)	60	61	61	60	1	1	0	None	None	None
20	Rocklin subdivision	Residence	1	B (67)	61	62	62	62	1	1	1	None	None	None
21	Rocklin subdivision	Residence	1	B (67)	63	64	64	64	1	1	1	None	None	None
22	Rocklin subdivision	Residence	3	B (67)	62	63	63	62	1	1	0	None	None	None
23	Rocklin subdivision	Residence	3	B (67)	61	62	62	62	1	1	1	None	None	None
24	Rocklin subdivision	Residence	4	B (67)	61	62	62	62	1	1	1	None	None	None
25	Rocklin subdivision	Residence	2	B (67)	60	61	61	60	1	1	0	None	None	None
26	Rocklin subdivision	Residence	2	B (67)	61	62	62	62	1	1	1	None	None	None
27	Rocklin subdivision	Residence	2	B (67)	62	63	63	63	1	1	1	None	None	None
28	Rocklin subdivision	Residence	2	B (67)	62	63	63	62	1	1	0	None	None	None
29	Rocklin subdivision	Residence	2	B (67)	62	63	63	63	1	1	1	None	None	None
30	Rocklin subdivision	Residence	4	B (67)	63	63	63	63	0	0	0	None	None	None
31	Rocklin subdivision	Residence	4	B (67)	61	62	62	62	1	1	1	None	None	None
32	Rocklin subdivision	Residence	2	B (67)	61	62	62	61	1	1	0	None	None	None

3.4.3 Mitigation, Minimization, & Avoidance Measures

1. The feasibility and reasonableness of proposed NB have been evaluated utilizing the preliminary noise abatement design that is included in the Noise Study Report. Based on the findings in that evaluation the following conclusions have been made regarding the construction of noise barriers as noise mitigation:
 - NB-1 is an existing barrier and any attempts at raising it are considered not reasonable, from a cost perspective.
 - NB-2 is in close proximity to the existing NB-1, therefore it is not reasonable due to factors including life cycle of abatement measures, social, visual impacts or from a cost perspective.
 - NB-4 is not reasonable from a cost perspective due to the large lot sizes.
 - The noise barriers NB-3, and NB5-1 to 4 are considered reasonable, from a cost perspective and feasible from a design viewpoint.

Therefore, based on the studies thus far completed, Caltrans will incorporate noise abatement measures in the form of the noise barriers: NB3, and NB5-1 to 4 as characterized in Figures 5a-f. Heights would range from 4.3-4.9m (14-16ft). Calculations based upon preliminary design data indicate that the barriers would reduce noise by 5-9 dba for NB3 and 5-10 dba for NB5-1 to 4. For Alternative 3, sound walls will only be included adjacent to new or modified auxiliary lanes.

2. Construction noise is regulated by Caltrans' standard specifications (Section 7-1.01I, "Sound Control Requirements"), which state that noise levels generated during construction shall comply with applicable local, state, and federal regulations and that all equipment shall be fitted with adequate mufflers according to the manufacturers' specifications.

Through the implementation of the aforementioned mitigation and minimization measures, there will not be any significant direct, indirect, short-term, long-term or unavoidable impacts on existing or predicted noise levels within the project area.

Figure 5a. Noise Monitoring, Modeling Stations, Land Use, & Studied Noise Barriers near Tallwood Circle.

**Figure 5b. Noise Monitoring, Modeling Stations, Land Use, & Studied
Noise Barriers near new Tabernacle Baptist Church/School.**

Figure 5c. Noise Monitoring, Modeling Stations, Land Use, & Studied Noise Barriers near Cirby Way.

**Figure 5d. Noise Monitoring, Modeling Stations, Land Use, & Studied
Noise Barriers near Douglas Boulevard.**

Figure 5e. Noise Monitoring, Modeling Stations, Land Use, & Studied Noise Barriers near SR 65.

Figure 5f. Noise Monitoring, Modeling Stations, Land Use, & Studied Noise Barriers near Woodside Park.

3.5 Energy

All build alternatives would reduce the energy demand by easing congestion and improving traffic flow along I-80. This would increase fuel efficiency and reduce energy demand. Alternative 2, with HOV lanes for carpools and commuter buses, would also encourage ridesharing that reduces energy demand further. Therefore the project will not have any significant direct, indirect, short-term, long-term or unavoidable impacts on energy demand or resources.

3.6 Wetlands and Other Waters of the United States

Wetlands and other waters are protected under a number of laws and regulations. At the federal level, the Clean Water Act (33 U.S.C. 1344) is the primary law regulating wetlands and waters. The CWA regulates the discharge of dredged or fill material into Waters of the United States, including wetlands. Waters of the United States include navigable waters, interstate waters, territorial seas and other waters that may be used in interstate or foreign commerce. To classify wetlands for the purposes of the CWA, a three-parameter approach is used that includes the presence of hydrophytic (water-loving) vegetation, wetland hydrology, and hydric soils (soils subject to saturation/inundation). All three parameters must be present, under normal circumstances, for an area to be designated as a jurisdictional wetland under the CWA.

The Executive Order for the Protection of Wetlands (E.O. 11990) also regulates the activities of federal agencies with regard to wetlands. Essentially, this executive order states that a federal agency cannot undertake or provide assistance for new construction located in wetlands unless the head of the agency finds: 1) that there is no practicable alternative to the construction and 2) the proposed project includes all practicable measures to minimize harm.

At the state level, wetlands and waters are regulated primarily by the CDFG and the CVRWQCB. Sections 1600-1607 of the CDFG Code require any agency that proposes a project that will substantially divert or obstruct the natural flow of or substantially change the bed or bank of a river, stream, or lake to notify CDFG before beginning construction. If CDFG determines that the project may substantially and adversely affect fish or wildlife resources, a Lake or Streambed Alteration Agreement (Section 1601) will be required. CDFG jurisdictional limits are usually defined by the tops of the stream or lake banks, or the outer edge of riparian vegetation, whichever is

wider. Wetlands under jurisdiction of the ACOE may or may not be included in the area covered by a Streambed Alteration Agreement obtained from the CDFG.

The Regional Water Quality Control Boards were established under the California Porter-Cologne Water Quality Control Act to oversee water quality. In this case the CVRWQCB also issues water quality certifications in compliance with Section 401 of the CWA. Please see the Water Quality section 4.1 for additional details.

3.6.1 Affected Environment

The project site is located in the Great Central Valley Floristic Province, Sacramento Valley sub-region. The climate fluctuates with the seasons, with hot dry summers and cool wet winters. Average annual rainfall in the project area is ~56cm (22in). Elevations at the project site ~46-61m (150-200ft). The California Wildlife Habitat Relationships Program (CWHR), administered by the CDFG, identified four habitat types within or adjacent to the project site including valley foothill riparian (VRI), Fresh Emergent Wetland (FEW), and Riverine (RIV).

3.6.1.1 Valley Foothill Riparian

Valley foothill riparian habitats are associated with gentle topography and low velocity stream flows. The structure of VRI usually consists of deciduous overstory trees with a shrub layer with canopy cover reaching 80 percent or more (CDFG 1999). VRI habitat is found along Cirby Creek and Miners Ravine. Overstory trees consists primarily of interior live oak (*Quercus wislizenii*), valley oak (*Q. lobata*), Blue oak (*Q. douglassi*), willow (*Salix sp.*), alder (*Alnus sp.*) and Fremont cottonwood (*Populus fremonti*) with an open understory of native and non-native forbs and shrubs.

3.6.1.2 Fresh Emergent Wetlands

Fresh emergent wetlands are characterized by erect, rooted herbaceous hydrophytes (CDFG 1999). The roots of FEW vegetation thrive in an anaerobic environment and perennial monocots are usually the dominant vegetation. They are among the most species rich wildlife habitats in California. In the project area the FEW is dominated by Baltic rush (*Juncus balticus*) and sedge (*Cyperus sp.*).

A small wetland is located in the project area adjacent to eastbound I-80, east of the Douglas Blvd, onramp. The wetland/marsh occurs at the southern edge of a vacant field that was recently plowed. The water comes from an unknown source, but appears to have accumulated from a combination of ditches running under the

freeway and also along the parking lot adjacent to the field. Small cattail marshes are also located adjacent to various culverts proposed for replacement.

3.6.1.3 Riverine

Riverine systems are characterized by intermittent or continually running water. Water temperature increases and the bottom substrate changes from rocky to muddy as elevation decreases. Many wildlife species use open water zones for resting and escape cover and areas closer to shore provide food for waterfowl, shorebirds, and other species. Within the project limits both Cirby Creek and Miners Ravine qualify as RIV systems.

3.6.2 Impacts

3.6.2.1 Bridge Widening

The Miners Ravine and Linda Creek Bridges are planned to be widened on either side approximately 4.57m (15ft). This will involve the addition of bridge bents to support the deck structure. In order to place new bridge bents to support the wider bridge structure, an area will need to be excavated within about 1.52m (5ft) of the active channels. To prevent water from entering the excavated holes, steel sheeting will be placed on the outside of the stream channel to prevent water from entering or seeping into the excavated area. Large equipment such as cranes and tractors will access both bridges at all four corners of the main spans. An area of 4.57-9.14m (15-30ft) may be cleared under both sides of the main spans. Temporary access roads will be constructed over the narrowest portion of the streams for equipment access to all quadrants underneath the main bridge spans. These access roads will most likely consist of plywood and will be supported by at least one cement block inside the streams.

Although the Linda Creek Bridge will undergo a widening process as described above, the actual construction will be less complicated because underneath the Linda Creek Bridge the streambed is lined with concrete. In addition all four bridge footings are located outside the stream channel and sheeting will not be necessary.

3.6.2.2 Other construction work impacts

The realignment of the Douglas Blvd. eastbound onramp and replacement of various culverts may impact approximately 0.1ha (0.25ac) of fresh emergent wetlands. In addition, an estimated 77 culverts will need to be extended or replaced for the proposed project. Biological surveys were done to ascertain whether any of the culverts would encroach upon the ACOE definition of “Waters of the United States” and only one culvert at KP 7.58 (PM 4.71), east of SR 65, met the definition of Waters of the United States.

There are not any practicable alternatives that would avoid impacts during and after construction to Waters of the United States, and/or wetlands. However, the proposed project includes all practicable measures to minimize impacts (see Section 3.6.3 for details). A Nationwide Section 404 permit from the ACOE and a Section 401 certification will be required from the CVRWQCB before construction. Work along Miners Ravine and Cirby Creek will also require a 1601 Streambed Alteration Agreement from CDFG.

3.6.3 Mitigation, Minimization, & Avoidance Measures

Through the implementation of the following mitigation minimization and avoidance measures, as well as permit conditions, there will not be any significant direct, indirect, short-term, long-term or unavoidable impacts on wetlands or other Waters of the United States.

1. Environmentally Sensitive Areas (ESAs) will be identified at the edge of the designated work areas to prevent additional impacts to wetlands, other riparian vegetation and waterways. The ESAs will be established as one of the first orders of work, prior to any clearing or grubbing. The boundary of the work area/ESA will be clearly identified on the project plans and in the field. The limits of the ESAs will be designated with flagging and/or fencing and maintained throughout the construction period.
2. Where working areas encroach on live streams, barriers adequate to prevent the flow of muddy water into streams shall be constructed and maintained between working areas and streams.

3. All temporary fill required for stream crossing/work will be removed upon completion of in-stream work activities and prior to October 15th of that construction year.
4. Incorporation of all other measures from Section 3.1.3.
5. Any additional measures included in the 1601 Streambed Alteration Agreement, Section 404 permit, and Section 401 Certification.

3.7 Vegetation

The United States Fish and Wildlife Service (USFWS) and CDFG share regulatory responsibility for the protection of special-status plant species. “Special-status” species are selected for protection because they are rare and/or subject to population and habitat declines. Special status is a general term for species that are afforded varying levels of regulatory protection. The highest level of protection is given to threatened and endangered species; these are species that are formally listed or proposed for listing as endangered or threatened under the Federal Endangered Species Act (FESA) and/or the California Endangered Species Act (CESA). The regulatory requirements for FESA can be found at United States Code 16 (USC), Section 1531, et. seq. See also 50 CFR Part 402. The regulatory requirements for CESA can be found at CDFG Code, Section 2050, et. seq. Department projects are also subject to the Native Plant Protection Act, found at CDFG Code, Section 1900-1913, and the CEQA, Public Resources Code, Sections 2100-21177. Please see the Threatened and Endangered Species Section (3.9) in this document for detailed information regarding these species.

This section of the document discusses all the other special-status plant species, including CDFG fully protected species and species of special concern, USFWS candidate species, and non-listed California Native Plant Society rare and endangered plants.

On February 3, 1999, President Clinton signed Executive Order 13112 requiring federal agencies, or projects that use federal funding, to combat the introduction or spread of invasive species in the United States. The order defines invasive species as “any species, including its seeds, eggs, spores, or other biological material capable of propagating that species, that is not native to that ecosystem whose introduction does or is likely to cause economic or environmental harm or harm to human health.”

FHWA guidance issued August 10, 1999, directs the use of the state's noxious weed list to define the invasive plants that must be considered as part of the analysis for a proposed project.

Native oaks are protected by the City of Roseville under the Oak Tree Preservation Ordinance (City of Roseville Municipal Code, Title 16 Section 16.10) and The City of Rocklin under the Rocklin Municipal Code (Section 17.77.100). These documents also provide guidelines for construction activities near protected trees. Additional guidance for Native Oak tree preservation is given under California State Senate Concurrent Resolution Number 17 that states the following:

“The measure would request those state agencies to undertake, in the performance of their duties and responsibilities, to preserve and protect native oak woodlands to the maximum extent feasible and consistent with the performance of those duties and responsibilities, or provide for replacement planting where designated oak species are removed from oak woodlands.”

3.7.1 Affected Environment

Research was conducted prior to field surveys to determine the vegetation communities in the project area and the associated specific plants. Emphasis was placed on the special status species that may occur. This research involved database searches for rare plant and habitat occurrences, reviewing published and unpublished material, and contacting knowledgeable individuals.

Field surveys followed the floristic survey protocol recommended by CDFG to locate and identify plant species located within the project study area. Field survey schedules to identify special status plants were determined based on the known blooming periods of these species.

Some of the plants which were considered, though not formally listed as rare or endangered under the CESA, meet the definitions of Section 1901, Chapter 10 (Native Plant Protection) of the CDFG Code, and are eligible for State listing. These plant species were given equal consideration during the project assessment as if they were already listed species. Please see Section 3.6.1 for additional habitat description.

3.7.2 Impacts

Field surveys, database and literature searches regarding vegetation for this project revealed that even though there will be vegetation removal for the proposed project, the three proposed build alternatives are not expected to significantly impact any sensitive plant species.

3.7.2.1 Oak Trees

Approximately 10 large interior live oaks (*Quercus wislizenii*) lining the slopes above Cirby Creek and two blue oaks (*Quercus douglassi*) found in the seasonal wetland/marsh area between Douglas Boulevard and the Lead Hill Boulevard overpass may be removed. Numerous other native oaks (approximately 150 in total) line I-80 within the project vicinity and may require removal to complete the freeway widening and sound wall installation.

3.7.2.2 Riparian Vegetation

The widening of the bridges over Miners Ravine and Cirby Creek will impact approximately 0.061ha (0.15ac) and 0.044ha (0.11ac) of VRI habitat respectively depending on alternatives. Temporary impacts (vegetation removal) to riparian vegetation adjacent to the temporary stream crossing may occur during installation and removal of the temporary stream crossing, culvert replacement, and various construction activities (see also Section 3.6.2).

3.7.3 Mitigation, Minimization, & Avoidance Measures

Through the implementation of the following mitigation minimization and avoidance measures, as well as ordinance restrictions/conditions, there will not be any significant direct, indirect, short-term, long-term or unavoidable impacts on vegetation within the project area.

1. As part of the project and in accordance with the City's Oak Tree Preservation Ordinance native trees will be identified, evaluated and tagged. Oak trees that are greater than or equal to 6 inches in diameter at breast height (dbh) that are removed as a result of the proposed project will be replaced at a ratio of one seedling for every 1 inch of tree dbh removed.
2. ESAs will be identified at the edge of the designated work areas to prevent additional impacts to wetlands, riparian vegetation, and waterways. The ESAs will be established as one of the first orders of work, prior to any clearing or

- grubbing. The boundary of the work area/ESA will be clearly identified on the project plans and in the field. The limits of the ESAs will be designated with flagging and/or fencing and maintained throughout the construction period.
3. In order to reduce the potential of introducing invasive or non-native plant species into the project area and to comply with Executive Order #13112 (Invasive Species), only native California plant species that are appropriate for the project area shall be used. All off road construction equipment shall be cleaned of potential noxious weed sources (mud and vegetation) before project entry is granted, as well as after entering a potentially infested area and before moving on to another. Equipment shall be considered free of soil, seeds, and other such debris when a visual inspection does not disclose such material. Equipment washing stations shall be placed in areas that afford easy containment and monitoring outside of the project area. Furthermore, only native plant species appropriate for the project area will be used in any erosion control or re-vegetation seed mix. No dry farmed straw will be used, and certified weed-free straw shall be required where erosion control straw is to be used.
 4. The Caltrans Office of Landscape Architecture shall coordinate with a biologist in the Office of Environmental Management to prepare an erosion control and re-vegetation plan for areas disturbed by construction activities.
 5. All additional measures included in the 1601 Streambed Alteration Agreement, Section 404 permit, and Section 401 Certification pertinent to vegetation removal will be followed.

3.8 Wildlife

Many state and federal laws regulate impacts to wildlife. The USFWS, National Marine Fisheries Service (NMFS) and CDFG are responsible for implementing these laws. This section discusses potential impacts and permit requirements associated with wildlife not listed or proposed for listing under FESA or CESA. Species listed or proposed for listing as threatened or endangered are discussed in following Section 3.9. All other special-status animal species are discussed here, including CDFG fully protected species and species of special concern, and USFWS or NMFS candidate species.

Federal laws and regulations pertaining to wildlife include but are not limited to the following:

- Migratory Bird Treaty Act
- Fish and Wildlife Coordination Act

State laws and regulations pertaining to wildlife include but are not limited to the following:

- Sections 1601 – 1603 of the Fish and Game Code
- Section 4150 and 4152 of the Fish and Game Code

3.8.1 Affected Environment

A literature review was conducted to investigate the potential presence of species and habitats of concern within the project vicinity. A list of special status animals within the project vicinity was obtained based on information queried from the CDFG California Natural Diversity DataBase. All of these queries used the Citrus Heights, Roseville, Rocklin and Folsom 7.5 minute USGS quadrangles.

A list of wildlife species likely to occur within the project vicinity was developed based on information queried from the CWHR. This query identified 313 animal species as potentially occurring in FEW, RIV, and URB habitats in Placer County, CA. This includes 218 avian species, 65 mammals, 20 reptiles, and 10 amphibians.

The following species of concern were listed in the queries, but it was determined that there is a low potential of occurrence within the project site, or that suitable habitat does not exist within the project limits:

Western spadefoot (*Scaphiopus hammondi*), California horned lizard (*Phrynosoma coronatum frontale*), White faced ibis (*Plegadis chihi*), Ferruginous hawk (*Buteo regalis*), Coopers hawk (*Accipiter cooperii*), Western burrowing owl (*Athene cunicularia hypugea*), Tricolored blackbird (*Agelaius tricolor*), Fringed myotis (*Myotis thysanodas*), Long-legged myotis (*Myotis volans*), Small-footed myotis (*Myotis ciliolabrum*)

The species of concern that may occur within the project limits are discussed in more detail in Section 3.8.2

3.8.2 Impacts

Cirby Creek and Miners Ravine may potentially provide habitat for the Northwestern pond turtle (*Clemmys marmorata marmorata*) and the Western pond turtle (*Clemmys marmorata*). Though there are no records of either species of pond turtle occurring in the project vicinity, various construction activities could impact any turtles in the project site.

It is anticipated that Cliff swallows (*Hirundo pyrrhonota*) may try to nest on the Linda Creek and Miners Ravine Bridges between February 15th and September 1st. Cliff swallows and their nests were observed during all site visits. Other bird species including waterfowl, shore birds, raptors, and neotropical migrants could potentially use fresh emergent wetlands and riparian vegetation in the project area for nesting, cover, and foraging. Riparian communities located both upstream and downstream of the project site should provide nesting, cover, and foraging habitat for any temporarily displaced avian species.

Species of bats including the Yuma myotis (*Myotis yumanensis*) and Pacific Townsend's big-eared bat (*Corymorhinus townsendii townsendii*) could use the Miners Ravine and Linda Creek Bridges for night roosting, maternity roost sites, and winter hibernacula. No roosting bat species were observed during any of the site visits, but signs (bat guano) of bat presence were identified.

3.8.3 Mitigation, Minimization, & Avoidance Measures

Through the implementation of the following standard minimization and avoidance measures, including construction work windows, there will not be any significant direct, indirect, short-term, long-term or unavoidable impacts on wildlife within the project area.

1. Special provisions shall include the requirement to temporarily suspend work in the event that any of the above mentioned species are detected in the construction area during construction activity. This will allow the animal to escape the immediate area and locate cover elsewhere.
2. If any work is anticipated on bridge or over-crossing structures between February 15th and September 1st, daily scalping of partially completed nests is permitted to discourage nesting. Prior to February 15th, existing nests shall be removed and exclusionary devices, such as netting, will be used. If new nests are built or

existing nests become occupied, then any work that would interfere with or discourage swallows from returning to their nests will not be permitted.

3. A qualified biologist will perform a nesting bird survey prior to the removal of vegetation in the riparian zone of Cirby Creek and Miners Ravine where access to the stream channel is required. If nesting birds are present, no construction activities that will interfere with nesting activities will be permitted until a qualified biologist determines the nest is no longer in use.
4. If tree removal is scheduled to take place between February 15th and September 1st, then a qualified biologist will perform a nesting bird survey prior to the removal of trees within the project limits. If nesting birds are present, no construction activities that will interfere with nesting activities will be permitted until a qualified biologist determines the nest is no longer in use.

3.9 Threatened and Endangered Species

The primary federal law protecting threatened and endangered species is the FESA: United States Code (USC), Section 1531, et seq. (see also 50 CFR Part 402). This act and subsequent amendments provide for the conservation of endangered and threatened species and the ecosystems upon which they depend. Under Section 7 of this Act, federal agencies or other agencies utilizing federal money, are required to consult with the USFWS and the NMFS to ensure that they are not undertaking, funding, permitting or authorizing actions likely to jeopardize the continued existence of listed species or destroy or adversely modify designated critical habitat. Critical habitat is defined as geographic locations critical to the existence of a threatened or endangered species. The outcome of consultation under Section 7 is a Biological Opinion or an incidental take permit. Section 3 of FESA defines “take” as “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect or any attempt at such conduct.”

At the state level, the CESA, California Fish and Game Code, Section 2050, et seq. emphasizes early consultation to avoid potential impacts to rare, endangered, and threatened species and to develop appropriate planning to offset project caused losses of listed species populations and their essential habitats. Section 2081 of the Fish and Game Code prohibits "take" of any species determined to be an endangered species or a threatened species. Take is defined in Section 86 of the Fish and Game Code as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." CESA allows for a take incidental to otherwise lawful development projects; for these actions an incidental take permit is issued by CDFG. For projects requiring a

Biological Opinion under Section 7 of the FESA, CDFG may also authorize impacts to CESA species by issuing a Consistency Determination under Section 2080.1 of the Fish and Game Code.

3.9.1 Affected Environment

As mentioned in the previous section, a literature review was conducted to investigate the potential presence of species and habitats of concern within the project vicinity. A list of special status animals within the project vicinity was obtained based on information queried from the CDFG California Natural Diversity DataBase. Pursuant to Section 7 of the FESA, a special status species list was requested and received from the USFWS. All of these queries used the Citrus Heights, Roseville, Rocklin and Folsom 7.5 minute USGS quadrangles.

The following endangered or threatened species were listed in the queries, but it was determined that there is a low potential of occurrence within the project site, or that suitable habitat does not exist within the project limits:

Vernal pool fairy shrimp (*Branshinecta lynchi*), Vernal pool tadpole shrimp (*Lepidurus packardi*), Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*), Delta smelt (*Hypomesus transpacificus*), Sacramento splittail (*Pogonichthys macrolepidotus*), Giant garter snake (*Thamnophis gigas*), Aleutian Canada goose (*Branta Canadensis leucopareia*), Bald eagle (*Haliaeetus leucocephalus*), American peregrine falcon (*Falco peregrinus anatum*), Greater sandhill crane (*Grus Canadensis tabida*), Little willow flycatcher (*Epidonax trailii brewsteri*), Bank Swallow (*Riparia riparia*)

The endangered or threatened species that may occur within the project limits are discussed in more detail in Section 3.9.2.

3.9.2 Impacts

It is assumed that the Central Valley California steelhead Environmentally Significant Unit (ESU) (*Oncorhynchus mykiss*), and the Fall-run Chinook salmon ESU (*Oncorhynchus tshawytscha*) species may be present within the drainages of Cirby Creek and Miners Ravine. The widening of the Miners Ravine and Linda Creek Bridges will impact approximately 0.06ha (0.15ac) and 0.04ha (0.11ac) of VRI habitat respectively. The construction of a temporary stream crossing may

temporarily impact the federally listed Central Valley California ESU steelhead and Fall-run Chinook salmon ESU. These temporary impacts will not likely result in a trend towards federal listing or loss of species viability.

Cirby Creek and Miners Ravine may also potentially provide habitat for Northern red-legged frog (*Rana aurora draytonii*) (NRLF). Though there are no records of NRLF occurring in the project vicinity, avoidance measures listed below are to ensure protection in case of detection during construction activities. Impacts will be minimized during all construction stages by using Caltrans BMPs.

3.9.3 Mitigation, Minimization, & Avoidance Measures

Through the implementation of the following mitigation, minimization, and avoidance measures, including construction work windows, there will not be any significant direct, indirect, short-term, long-term or unavoidable impacts on Threatened or Endangered Species currently existing within the project area.

1. Steelhead and salmon may be present in Cirby Creek and Miners Ravine during the construction period. Impacts to these sensitive salmonid species will be avoided and minimized by conducting in stream work during the period between migration runs, and when non-natal juvenile salmonids are least likely to be present. Therefore in stream work, including the construction and removal of temporary stream crossing structures, for the widening of the Miners Ravine and Linda Creek Bridges may only proceed between June 15th and October 15th. All temporary fills required for the stream crossing/work platform will be removed upon completion of in-stream work activities (prior to Oct. 15).
2. Caltrans shall ensure that the contractor conducts work operations so as to allow free passage of all age classes of steelhead and Chinook salmon in Miners Ravine and Cirby Creeks at all times. Any intakes that may be required for water pumps associated with wetting/ irrigation/ de-watering of sites shall be screened to NMFS specifications for salmonids.
3. Installation and design of the temporary stream crossing will adhere to NMFS published guidelines.
4. A qualified fishery biologist will be present on site to relocate any steelhead in the immediate construction area before culverts and fill are installed and removed.
5. Incorporation of mitigation, minimization, & avoidance measures from Section 3.8.3.

3.10 Recreational Areas

3.10.1 Affected Environment

Interstate 80 runs adjacent to three publicly owned parks within the limits of the proposed project.

In Roseville, Cirby Park is located north of I-80 along Cirby Creek. This park does not appear as a developed park or recreation area in the City of Roseville General Plan. However signs posted at the site and data from the Placer County assessor's office indicate this land is owned by the City of Roseville and is within an area identified on the City's General Plan Land Use Map as Open Space/Parks/Recreation. According to City of Roseville staff, this area is owned by the City and maintained by nearby residents.

Another undeveloped recreational area in Roseville adjacent to the project lies along Miners Ravine. Currently there are no facilities in this area, but the City of Roseville, in conjunction with Caltrans and FHWA, is in the process of planning a bicycle facility along Miners Ravine. The proposed bike trail would pass under I-80 at the existing Miners Ravine Bridge and would connect Eureka Road to Harding Boulevard in the area between Lead Hill Boulevard and Sunrise Avenue.

Woodside Park in Rocklin is located in the Woodside community along Westwood Drive, north of I-80. This is a developed facility, including picnic tables, barbeque grills, and assorted playground equipment.

3.10.2 Impacts

The proposed project would not require the acquisition of any land, or change access points to the identified recreation properties. No adverse impacts would occur in the form of altered visual landscape or increased traffic noise.

Alternatives 1 and 2 would require the widening of the existing I-80 bridge over Cirby Creek. This would involve some widening to the north of I-80, in the direction of Cirby Park. Widening would occur within the Caltrans ROW and would not directly impact use of the park. Plans for a bikeway through this park and under the I-80 bridge would not be affected by the proposed project since the plans for the bikeway have not begun development, it is likely that the bikeway would not be

designed and constructed until after the proposed project has either been built or discarded from consideration.

Project construction of either Alternative 1 or 2 may require temporary closure of the proposed Sculpture Park to Harding Boulevard Bikeway (through Miners Ravine) if that project is constructed prior to the I-80 freeway improvements. If that situation arises, the existing Class II bikeways along Lead Hill Boulevard, Eureka Road, Sunrise Avenue, and Harding Boulevard will still be open to provide access to destinations that will be served by the proposed Miners Ravine Bikeway.

Through joint planning efforts with the City or Roseville and conditions of the Traffic Management Plan, there will not be any significant direct, indirect, short-term, long-term or unavoidable impacts on recreational opportunities or areas.

3.11 Land Use

The following section discusses the existing land uses surrounding the proposed project area. It is important to note that Caltrans is not responsible for local land use decisions; rather it is the responsibility of the Cities of Roseville, Citrus Heights, Rocklin, and the Counties of Sacramento and Placer. Nevertheless, the proposed freeway improvements are consistent with all applicable City, County, and Regional plans for this area. Therefore the proposed project will not have any significant direct, indirect, short-term, long-term or unavoidable impacts on land use.

3.11.1 City of Roseville

Interstate 80 traverses Roseville's infill area roughly from southwest to northeast. Major arterials intersecting I-80 within the project area are as follows from south to north: Cirby Way, Douglas Boulevard, Atlantic Street/Eureka Road, Roseville Parkway, and SR 65. Sunrise Avenue runs parallel and adjacent to I-80's southeastern edge roughly between Douglas Boulevard and Roseville Parkway.

Land use in the I-80 corridor south of Douglas Boulevard is a mixture of residential, commercial, and business professional offices. There is a concentration of professional offices on the southeast side of I-80 north of Coloma Way and south of Douglas Boulevard including a cluster of medical offices. North of Douglas Boulevard along both sides of the I-80 corridor the land use designations are open space, commercial, and professional offices.

3.11.2 City of Rocklin

Land use in the City of Rocklin is a mixture of residential, recreation/conservation. North of I-80 in the project area within the Rocklin City limits, is an area known as Woodside, while on the south side of I-80 within in Rocklin is the Secret Ravine-Sierra Bluffs community.

3.12 Planning

The following section addresses the proposed project's consistency with the localized long range planning documents that guide the development of this region as well as any impacts that this project may have with existing regional plans for this region. As with land use decisions, Caltrans is not responsible for local planning efforts for the areas adjacent to I-80, and therefore the proposed project will not have any significant direct, indirect, short-term, long-term or unavoidable impacts on locally produced planning documents.

3.12.1 Consistency with Planning Goals and Policies

3.12.1.1 Placer County Transportation Planning Agency

The Placer County Transportation Planning Agency is the lead transportation planning body in Placer County. The PCTPA describes its Regional Transportation Plan as “a blueprint for the development of a balanced, comprehensive, multi-modal transportation system.” The RTP for 2022 was adopted in December 2001.

The RTP identifies several county-wide and regional transportation problems. Among these are the interrelated problems of congestion and growth. The RTP estimates growth in Placer County at 70 percent over the next twenty years. In terms of congestion, the RTP states that:

“As Placer County continues to grow, congestion on Interstate 80, state highways, and local roads continues to increase. Commute times become longer, and the capacity of many roadways during peak periods is exceeded, bringing traffic to a crawl. This diverts auto and truck traffic to parallel roadways that are not equipped to handle the increase in traffic.”

The RTP also contains a list of project types that are consistent with the Plan's goals and policies. Of the listed goals and policies, the following three are useful in evaluating the proposed project alternatives' consistency with this RTP:

- Capacity increasing projects only where alternative solutions would not be practical or cost-effective in resolving the problem.
- Projects to enhance the movement of agricultural, commercial, and industrial goods.
- Multi-occupant vehicle systems, such as public transit, ridesharing projects, and park-and-ride facilities.

All of the proposed build alternatives would be tentatively consistent with the first two of these three goals, since they would increase capacity on a highway, thereby facilitating goods movement. However, the first goal presented above implies that superior methods of resolving congestion problems would be preferred, if available and cost-effective.

The third of these three goals endorses "multi-occupant vehicle systems", but does not specifically name vehicle lanes dedicated to high occupancy vehicles. Since Alternative 2 provides an incentive for the use of multi-occupant vehicle systems it would succeed in complying with this goal. The other build alternatives are not consistent with this goal.

3.12.1.2 City of Roseville General Plan

HOV lanes are consistent with the General Plan policies of the City of Roseville. The City of Roseville has a Transportation Systems Management Ordinance with the goals to 1) reduce travel demand on the City's roadway system; 2) reduce total vehicle emissions in the City of Roseville and the South Placer County region; and 3) Circulation Element Policy 2, Implementation Measure 4 (Interagency Coordination) states that the City will work with the Placer County Transportation Commission and the Placer County Air Pollution Control District to develop and implement traffic control measures (TCM) that meet the goals and standards of the Placer County Congestion Management Program, the Placer County Air Quality Attainment Program, and the Air Quality Element of the General Plan (1992). In the City's Air Quality Element, the following policy and implementation measures apply:

Policy 5: Develop transportation systems that minimize vehicle delay and air pollution

Implementation Measure 7 (Mitigation Strategies – Motor Vehicles): Consider high occupancy vehicle lanes in street and highway widening and new construction projects for arterials and wider rights-of-way.

3.12.1.3 City of Rocklin General Plan

The City of Rocklin’s General Plan Circulation Element contains the following goal: “To provide and maintain a safe and efficient system of streets, highways, and public transportation to meet community needs and promote sound land use.” In support of this goal, the Circulation Element contains twenty-six policies. Of these, the following is the most directly applicable to the proposed project:

19. To support and encourage improvements to the existing State highway system and new routes that benefit the City of Rocklin.

All of the proposed project’s build alternatives may be considered improvements to the State highway system that would benefit the City of Rocklin. In addition, all of the build alternatives would provide a benefit in the form of improvements in accessibility.

3.12.1.4 Placer County General Plan

The Transportation and Circulation Element of the Placer County General Plan contains policies that are directly applicable to the proposed project.

Policy 3.A.16 states that “Placer County shall recommend that a ramp-metering program for the I-80 corridor between Auburn and the Sacramento County line be included in the next RTP prepared by the Placer County Transportation Commission (PCTC).”

Policy 3.17 states that “The County shall participate in a multi-modal corridor study of the I-80 corridor that will explore improvements to passenger rail service and HOV facilities to maximize the person-carrying capacity of the corridor.” This study was jointly conducted by Caltrans, SACOG, and the PCTPA in 2000 and is discussed in Section 2.2.2.

This element also contains a policy that supports the use of state and federal funding for capacity-increasing projects along I-80 that would serve through traffic.

All of the proposed build alternatives would include ramp meters at all freeway on ramps, making all build alternatives consistent with Policy 3.A.16.

Alternative 2 would be consistent with the spirit of Policy 3.17, which endorses studies of HOV lanes.

3.12.1.5 I-80 Corridor Study Investment Strategy Report

Caltrans, the PCTPA, and SACOG prepared a regional strategy for investments within the I-80 Corridor in July 2000. This plan covered a ten-year period, anticipating rapid growth in Yolo, Sacramento, and Placer Counties.

The long-term strategy for I-80 outlined in this plan includes the construction of HOV lanes on I-80 from the Placer County line to SR65. Alternative 2 of the proposed project would be consistent with this strategy. Alternatives 1 and 3 would not be supported by this planning document.

3.12.2 Impacts

3.12.2.1 Acquisition of vacant parcels

The proposed freeway improvements would require the partial acquisition of 9.14m (30ft) strips of privately owned right-of-way near the Lead Hill Boulevard over crossing of I-80 in Roseville. According to the Roseville General Plan, the three parcels that would require ROW acquisition by the State are vacant and zoned for commercial use. They are located south of I-80 with access along North Sunrise Avenue.

The three parcels, as shown in Table 11, are located in an area along I-80 that can be developed due to its proximity to a shopping center that includes several large retailers. The acquisition of the strips along the freeway frontage of these three parcels constitutes a small portion of the total parcel and would not affect the use of these parcels as commercial properties. In addition, the property owners would be compensated for their land at market value.

Table 11. Properties to be Partially Acquired

SIZE	LAND USE	ACQUISITION
6 acres	Vacant / Community Commercial	9.14m (30ft)
6.9 acres	Vacant / Community Commercial	9.14m (30ft)
11.3 acres	Vacant / Community Commercial	9.14m (30ft)

3.13 Growth Inducement

Growth inducement is defined for the purposes of this EIR as the relationship between the proposed transportation project and growth within the project area. A traditional shorthand way of analyzing growth inducement is whether or not the proposed project removes any of the obstacles to growth (see also *CEQA Guidelines section 15126.2(d)*). To the extent that a capacity increasing project removes obstacles to growth, it may be considered growth inducing. However existing congestion within the project area does not appear to be a constraint to growth. Furthermore, because of the amount of congestion within the project area, it is difficult to assert that the proposed additional capacity would not be matched by existing growth trends.

The proposed project is designed to relieve existing congestion along I-80 within the project limits. The Traffic Analysis Report prepared for this project indicates that, in 1999, the Level of Service within the majority of the project area was “F”, indicating that the roadway is at capacity and is no longer allowing stable vehicle movement during peak hours.

Local and regional planning documents for southern Placer County are based upon assumptions of substantial population growth over the next twenty years. The population projections prepared by SACOG as part of the 1999 MTP for Placer County indicated levels of growth reflected in Table 12. These projections were developed prior to the inclusion of the proposed project in the MTP. The proposed project has been developed in response to the presently congested conditions along I-80 and the projected increases in development in Placer County and throughout this region.

Table 12. Year 2025 SACOG Population, Housing and Jobs Projections

2025	City of Rocklin	City of Roseville	Placer County	SACOG Region
Population	70,490	109,610	415,335	2,814,254
Households	25,654	43,889	104,124	1,048,827
Housing Units	26,889	47,281	175,039	1,106,602
Jobs	22,414	116,481	227,510	1,359,756
Jobs/Housing Ratio	0.83	2.46	1.30	1.23

The proposed project is included in the Placer County Transportation Agency’s 2022 RTP. The Final Environmental Impact Report prepared for this plan states that the population of Placer County is expected to increase by 75 percent. This report goes

on to say that, “This anticipated growth is projected to occur without the addition of the projects included in the RTP.”

Discussions with planners representing the Cities of Roseville and Rocklin, and Placer County have indicated that changes in development patterns in Placer County are extremely unlikely to occur as a result of the proposed project.

3.13.1 Recent Trends

Regional employment data indicate that large numbers of workers in Placer County utilize I-80 to reach employment in Sacramento County, and that this trend will continue. Data also suggests that over the past three years, increasing congestion on I-80 has not affected the pace of development in Placer County.

In the period from 1999 to 2001, the population of the City of Roseville, where the greatest congestion occurred, increased by seven percent. Between January 1999 and January 2001, Rocklin’s population increased eighteen percent (see table 13 below). Therefore, the result of not improving this portion of I-80 would not be a reduction in the pace of growth in Placer County. While LOS “F” results in longer driving times as a result of reduced driving speed and frequent breakdowns in the flow of traffic, traffic will continue to utilize a congested roadway.

Table 13. Recent Population Increases in the Project Area

Area	1/1/99	1/1/00	1/1/01	Percent Change 1/99 to 1/01
Rocklin	32,650	36,000	38,634	18.3%
Roseville	77,300	80,100	83,002	7.4%
Placer County	240,400	248,700	257,511	7.1%

Source: Department of Finance Official State Estimates

3.13.2 Favorable Conditions for Growth

Placer County’s population continues to increase and is projected to increase over time in spite of increased commute times because of a number of factors. The *Placer County Economic and Demographic Profile 2001* states that land costs and local public policy toward development are relatively favorable in this area. Commercial rents and housing costs, while higher than in neighboring Sacramento County, are much lower than in the San Francisco Bay Area or in southern California. Additionally, Placer County offers recreational opportunities given its proximity to the Sierra Nevada foothills and mountains.

Furthermore, the ratio of jobs to housing units in the City of Roseville currently results in large amounts of in-commuting, relative to the City's population. Placer County's share of the region's jobs is expected to increase over time. Employment opportunities in Roseville will increasingly result in "reverse commutes," from within Sacramento County to Placer County, and commutes that stay within Placer County.

The *Needs Assessment Report – Study of Suburban Travel* prepared by SACOG in 1998 projected that the Roseville/Rocklin area would "have [year] 2015 employment equivalent to current employment in Downtown Sacramento (about 100,000 jobs)." This study anticipated that, between 1995 and 2015, the number of commute trips bound for the Roseville/Rocklin area would increase by 60,000. Much of this increase (36 percent) was expected to originate in the Roseville/Rocklin area itself. A large proportion (18 percent) of this increase was expected to come from northeast of the Roseville/Rocklin area, along I-80. The remaining increase in commuting trips bound for this area was expected to come from nearby communities, using a mixture of freeways and surface streets.

3.13.3 Conclusion

None of the proposed alternatives will have any significant direct, indirect, long-term or unavoidable impacts on growth in the vicinity of I-80 through the proposed project area. City and regional plans indicate that this portion of Placer County is prepared for relatively rapid growth in the near future. The most current data indicate that this growth is occurring and will continue to occur according to local planning projections with or without the proposed project.

3.14 Social and Economic Profile of the Surrounding Communities

The following section discusses the projected population growth, age, race, and income of the residents that live near the proposed project. The proposed project will not have any negative impacts on the surrounding communities that would disrupt or change their current racial or income composition.

3.14.1 Population

The Sacramento Area Council of Governments is an association of local governments in the six county Sacramento region (including city and county governments in El Dorado, Placer, Sacramento, Sutter, Yolo and Yuba Counties). As part of its mission

of coordinating transportation planning and funding for this region, SACOG prepares population projections for the counties and cities in this region.

SACOG anticipates that the region's population will increase by 930,000 residents between the years 2000 and 2025. Table 14 shows projected population increases for Placer County and the incorporated cities in the county. Nearly 20 percent of the growth in the SACOG region is projected for this county alone.

The City of Rocklin's population is expected to increase by 87 percent between 2000 and 2025, reaching 70,000 – nearly the current size of Roseville.

These projections show the City of Roseville reaching its maximum population, 109,600, in 2010, and not increasing beyond this mark within the projection period. This reflects the fact that areas covered by currently adopted specific plans will soon be built out.

Table 14. SACOG Population Projections by Jurisdiction for Placer County

	2000	2005	2010	2015	2020	2022	2025	Net Increase	Percent Growth
ROCKLIN	37,670	44,100	50,700	58,470	64,870	67,320	70,490	32,820	87%
ROSEVILLE	79,560	100,000	109,610	109,460	109,360	109,160	109,160	29,600	37%
LINCOLN	12,900	26,060	38,350	54,370	56,575	57,200	57,875	44,975	349%
LOOMIS	6,075	6,770	8,400	9,310	9,830	10,040	10,360	4,285	71%
UNINC. PLACER COUNTY	87,410	100,890	114,040	127,080	137,240	141,360	147,280	59,870	68%
PLACER COUNTY	237,145	292,640	336,805	376,240	396,785	404,580	415,335	178,190	75%

Source: Sacramento Area Council of Governments, March 2001

3.14.2 Age and Race

Data from the 2000 US Census shows that the median age for California in 2000 was 33.3 years, younger than the median age in Rocklin (34.5 years), Roseville (36.4 years), or Placer County (38 years).

Table 15 shows the racial composition of the populations of Roseville, Rocklin, and Placer County in comparison with that of California. The cities in the project area and Placer County as a whole are less racially diverse than California.

Table 15. Project Area Racial Composition

	City of Rocklin		City of Roseville		Placer County		CA
RACE	Number	Percent	Number	Percent	Number	Percent	Percent
One race	34,988	96.3	77,102	96.5	240,418	96.8	95.3
White	32,086	88.3	68,756	86	220,053	88.6	59.5
Black or African American	330	0.9	1,047	1.3	2,031	0.8	6.7
American Indian and Alaska Native	291	0.8	559	0.7	2,199	0.9	1
Asian	1,510	4.2	3,442	4.3	7,317	2.9	10.9
Native Hawaiian / Pacific Islander	70	0.2	157	0.2	386	0.2	0.3
Some other race	701	1.9	3,141	3.9	8,432	3.4	16.8
Two or more races	1,342	3.7	2,819	3.5	7,981	3.2	4.7

Source: 2000 U.S. Census

3.14.3 Income

The *Placer County Economic and Demographic Profile 2001 (Profile)* provides income data for Placer County and its largest cities for the year 2001, and comparisons with other counties in the region. Table 16 shows 1990 Census income indicator data with corresponding 2001 data from the *Profile* for Placer and Sacramento Counties, and for the cities of Roseville and Rocklin. This table also presents the proportion of residents below the poverty level in 1990.

Data indicates that median household income increased by more than 50 percent in Placer County, and by more than 60 percent in the cities of Roseville and Rocklin between 1990 and 2001. Per capita income increased by 65 percent in Rocklin, 78

percent in Roseville, and 72 percent in Placer County in this period. Income indicators within Sacramento County also rose between 1990 and 2001, but at a slower rate than within Placer County.

Table 16. Project Area Income and Poverty Data

	Rocklin		Roseville		Placer County		Sacramento County	
Year	1990	2001	1990	2001	1990	2001	1990	2001
Median Household Income	\$40,417	\$67,210	\$39,975	\$64,244	\$37,601	\$58,573	\$35,798	\$46,230
<i>Percent Change</i>	66%		61%		56%		29%	
Per Capita Income	\$17,729	\$29,278	\$17,430	\$31,049	\$17,311	\$29,691	\$15,265	\$22,870
<i>Percent Change</i>	65%		78%		72%		50%	
Percent Below Poverty (1990)	5.6%		6.8%		7.1%		12.5%	

Source: 1990 US Census and Placer County Economic and Demographic Profile 2001

3.14.4 Title VI and Environmental Justice

This project has been developed in accordance with the Civil Rights Act of 1964, as amended, and Executive Order 12898, “Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations.” The Executive Order requires Caltrans, as a recipient of federal highway funding, to take the appropriate and necessary steps to identify and address ‘disproportionately high and adverse’ effects of federal projects on minority and low-income populations.

No minority or low-income populations have been identified within the project limits. No disproportionately high and adverse impacts will occur to minority or low-income populations as a result of the proposed project and therefore will not have any significant direct, indirect, long-term or unavoidable impacts on the Social or Economic composition within the vicinity of I-80 through the proposed project area (see also Appendix A for Title VI statement).

3.15 Utilities

3.15.1 Affected Environment

Within the proposed project limits, local utility systems such as water mains/valves, sanitary sewer lines, telephone lines, and overhead power lines exist. A minimum of four water valves will be relocated or raised outside the existing ROW.

Up to nine overhead power lines may also be relocated as a result of the freeway improvements. Specifically between the eastbound Douglas Blvd. onramp and Lead Hill Blvd., 60 kilovolt (kv) power lines and 12kv distribution lines of high voltage identified pursuant to Public Utilities Commission General Order 131-D will be relocated onto the same pole.

Other areas where utilities are affected are locations where service is provided to power the freeway lighting, overhead signs, and irrigation. Because of the widening, many of the roadside lights will be relocated further away from the travel way. It is expected over 50 luminaries will be relocated. In addition, eight overhead sign structures will be relocated. Their relocation will not require establishment of new service, but essentially rewiring of the electrical features.

New electrical services will be provided for the TOS elements. Power for those locations will be drawn from existing power lines.

3.15.2 Impacts

During construction, any relocation of the water mains/valves or the power lines within the existing ROW may cause a temporary disconnection of power or water for those particular utilities. Usually, the disruption may be bypassed and inconvenience minimized when performed during low demand days and times. Freeway improvements will be constructed after completion of utility relocations.

3.15.3 Mitigation, Minimization, and Avoidance Measures

Caltrans will coordinate with utilities to minimize power or water disruption. If households are expected to be disrupted the utility companies will notify the households in advance. Through the notification of the residents in the event that a utility may be disrupted any potentially significant direct, indirect, long-term or unavoidable impacts on existing utilities shall be avoided.

3.16 Emergency Services

To the extent that traffic congestion relief is achieved, the proposed freeway improvements for Alternative 3 may provide improved access to local emergency response vehicles utilizing I-80 in the project area. Furthermore, Alternative 2 would provide a lane with very little congestion during peak hours, while Alternative 4 (no-build) would not provide accessibility improvements for emergency vehicles. During

construction it is standard procedure to expedite the passage of emergency vehicles through the work area therefore no significant direct, indirect, long-term, short-term or unavoidable impacts on emergency services will occur.

3.17 Traffic Conditions on I-80

Interstate 80 is a major east-west route that extends from the San Francisco Bay area through Sacramento to the Nevada State line and continues to the East Coast. Interstate 80 is designated as part of the National Network for large commercial vehicles and serves cross-country travel, recreational traffic to and from the Lake Tahoe region, as well as daily commuter traffic within the greater Sacramento urban area.

Between 1993 and 2000, monitoring of traffic conditions during the peak commute periods has shown a steady increase in the amount and duration of congestion, typically extending from west to east. To address this growing problem of traffic congestion and to maintain mobility and trip reliability, it is proposed that additional through lanes be added to the freeway from approximately 1.1 kilometers (0.70 miles) west of the Sacramento/Placer County line to approximately 1.56 kilometers (0.97 miles) east of the State Route 65 connector in Placer County.

Four alternatives were analyzed and their future performances compared for the I-80 corridor between the Sacramento/Placer County line and the SR 65 interchange. Please see Chapter 2 for the discussion on the four alternatives. This analysis assumed that several projects would be completed prior to 2006. One of which is a local project to modify the Douglas Boulevard interchange, which is nearly completely designed. Another is the Sacramento I-80 mainline HOV lane addition project from Watt Avenue to the Sacramento/Placer County line, which is currently under construction.

The analysis was done using Paramics micro-simulation modeling (traffic simulator), a highway simulation software developed by Quadstone Limited. Separate analyses were completed for the eastbound and westbound directions, as well as for each of the four alternatives. The paramics files used for the 1999 existing baseline was calibrated against actual field counts and tachometer runs to a high level of accuracy.

Future demand volumes for the various alternatives were developed using the Sacramento metropolitan area planning model (SACMET) and used to predict future conditions that were then placed into the traffic simulator. This planning model uses expected land use input provided by SACOG to project future volumes on the freeway system and local streets.

While it is impossible to verify the accuracy of future operations, the results that were generated by the Caltrans traffic simulator were deemed reasonable to the Caltrans traffic engineer.

It is important to note that Alternatives 1 through 3 will not have an adverse effect on the existing traffic conditions on I-80 and that the proposed improvements alleviate existing levels of congestion and the associated problems of high traffic demand on I-80.

3.17.1 Existing Traffic Conditions

I-80 within the limits of this study (see Figure 2) is a six-lane divided freeway with sections of auxiliary lanes between interchanges. The freeway is divided by a continuous metal beam or concrete median barrier. Inside and outside shoulders typically measure 2.0-3.0m (8-10ft).

Table 17 contains traffic volume counts provided by the District 3 Traffic Census Branch. The combined eastbound and westbound Annual Average Daily Traffic volumes (AADT) are shown for each location and by year.

Table 17. Mainline Volumes

Location	AADT				
	1996	1997	1998	1999	2000
Sac./ Pla. Co. Line to Riverside I/C	131,000	133,000	137,000	145,000	151,000
Riverside to Douglas I/C	121,000	124,000	128,000	138,000	145,000
Douglas to Taylor	120,000	124,000	127,000	138,000	148,000
Taylor Rd. to SR 65	102,000	106,000	109,000	116,000	138,000

AADT – Annual Average Daily Traffic

Source – 2000 Traffic Volumes on California State Highways – a Caltrans Publication

Using the traffic simulator, the Caltrans Office of Travel Forecasting predicted future demand volumes for the years 2006, 2016, and 2026. The future demand values were used to calculate the traffic/vehicle capacity within the project limits. Capacity is defined as the maximum amount of traffic that can be accommodated by a uniform segment of freeway under prevailing conditions. If the vehicular demand exceeds this capacity, then the vehicle density will increase and speeds will drop until breakdown occurs and queuing/congestion occurs. For a typical freeway, 2200 vehicles per hour (vph) per lane is used for capacity. For this project, actual field traffic counts conducted in 1999 measured the actual capacity of the roadway at approximately 2000 vph per lane prior to breakdown.

Existing congestion and speed data were collected during the morning and evening peak periods, Tuesday through Thursday on non-holiday weeks in the spring (March through May) and fall (September through November) while schools were in session. Each data collection period consisted of a two-car team, using the “floating car” method, where each car followed the other starting at intervals of 15 minutes. Each car then made several trips through the peak period, in a predetermined congested area along I-80.

The Fall 2001 Congestion Report, prepared by Caltrans District 3 Traffic Operations, Sacramento, identified the limits and duration of congestion for the I-80 corridor. The definition of recurrent congestion, which occurs regularly each weekday, is when speeds drop below 35mph for over 15 minutes. This does not include congestion that is caused due to accidents or special events.

3.17.1.1 Westbound

Results from the traffic study prepared for this project show that the typical westbound commute experiences recurrent congestion from Madison Ave. to the Atlantic St. interchange between the hours of 6:15am – 8:45am. The average amount of congestion has increased from 419,000 vehicle-hours per year in Fall 2000 to 765,000 vehicle-hours per year in Fall 2001. Congestion monitoring during 2001 showed the average speed during the peak period to be 23.8mph along this congested segment of I-80. In the fall of 2001 during the evening peak period of 4:15pm-5:30pm traffic congestion was also observed between Douglas Boulevard and the SR 65 interchanges.

3.17.1.2 Eastbound

In 2001, during the evening peak period of 4:15 pm-5:30 pm recurrent congestion on I-80 was observed between the Greenback Lane and the Douglas Boulevard interchanges. The average amount of congestion has increased from 9,000 vehicle-hours per year in fall 2000 to 40,000 vehicle-hours per year in fall 2001. Congestion monitoring during 2001 showed the average speed during the peak period to be as low as 23mph along this congested segment of I-80. In addition, for the first time in 2001, minor traffic delays were observed and recorded in the eastbound direction during the AM peak period between east of Riverside Avenue to the Douglas Blvd interchange between 6:45am – 8:15am.

3.17.1.3 Accident History

Within the project limits during the three-year period beginning in April 1998 and concluding in March 2001 the eastbound direction experienced 157 (40 percent) accidents while the westbound direction had 234 (60 percent) and 1 fatality. A total of 391 accidents were recorded and when compared to the statewide average for similar facilities, both directions of this section of I-80 experienced lower accident rates in all of the categories, including the fatal and fatal + injury accident rates. In the westbound direction, 57 percent of the total westbound accidents reported for the three-year period were rear end type collisions, 20 percent were hit object and 15 percent sideswipe. In the eastbound direction, 43 percent of the total eastbound accidents were rear end type collisions, 29 percent were hit object, and 22 percent sideswipe. According to Caltrans and CHP accident reports, this would indicate that slowdowns, lane changing and congestion were the main cause of accidents within the project area. See Table 18, for accident rate comparisons.

Table 18. Accident Rate Summary (4/1/1998 to 3/31/2001)

Dir.	Location	Actual Accident Rate			Average Accident Rate for similar sized freeway segment		
		Fatal	F+I**	Total	Fatal	F+I**	Total
WB	Sac/ Placer Co Line to 0.5 mi. east of Route 65	0.003	0.19	0.60	0.006	0.31	1.00
	Sac/ Placer Co Line to Douglas Blvd.	0.000	0.19	0.56	0.006	0.33	1.07
	Douglas Blvd. To Taylor Rd.	0.000	0.22	0.93	0.005	0.29	0.94
	Taylor Rd. to Route 65	0.000	0.21	0.39	0.006	0.33	1.08
EB	Sac/ Placer Co Line to 0.5 mi. east of Route 65	0.003	0.11	0.40	0.006	0.31	1.00
	Sac/ Placer Co Line to Douglas Blvd.	0.000	0.17	0.59	0.006	0.33	1.07
	Douglas Blvd. To Taylor Rd.	0.000	0.07	0.28	0.005	0.29	0.94
	Taylor Rd. to Route 65	0.000	0.09	0.50	0.006	0.33	1.08

Note – All rates are in accidents/million vehicle miles (acc./mvm)

**F+I – Fatal + Injury; Total includes all reported accidents

3.17.1.4 Level of Service (LOS)

LOS A -describes free-flow operations. Free-flow speeds prevail. Vehicles are almost completely unimpeded in their ability to maneuver within the traffic stream. Even at the maximum density for LOS A, the average spacing between vehicles is about 162m (530ft), or 26 car lengths, which affords the motorist a high level of

physical and psychological comfort. The effects of incidents or point breakdowns are easily absorbed at this level.

LOS B -represents reasonably free flow, and free-flow speeds are maintained. The lowest average spacing between vehicles is about 101m (330ft), or 17 car lengths. The ability to maneuver within the traffic stream is only slightly restricted, and general level of physical and psychological comfort provided to drivers is still high. The effects of minor incidents and point breakdowns are still easily absorbed.

LOS C -provides for flow with speeds at or near the free-flow speed of the freeway, Freedom to maneuver within the traffic stream is noticeably restricted at LOS C, and lane changes require more care and vigilance on the part of the driver. Minimum average spacings are in the range of 67m (220ft), or 11 car lengths. Minor incidents may still be absorbed, but the local deterioration in service will be substantial. Queues may be expected to form behind any significant blockage.

LOS D -is the level at which speeds begin to decline slightly with increasing flows. In this range, density begins to increase somewhat more quickly with increasing flow. Freedom to maneuver within the traffic stream is more noticeably limited, and the driver experiences reduced physical and psychological comfort levels. Even minor incidents can be expected to create queueing, because the traffic stream has little space to absorb disruptions. Minimum average vehicle spacings are about 50m (165ft), or eight car lengths.

At its highest density value, **LOS E** describes operation at capacity. Operations at this level are volatile, there being virtually no usable gaps in the traffic stream. Vehicles are spaced at approximately six car lengths, leaving little room to maneuver within the traffic stream at speeds that are still over 49mph. Any disruption to the traffic stream, such as vehicles entering from a ramp or vehicle changing lanes, can establish a disruption wave that propagates throughout the upstream traffic flow. At the capacity, the traffic stream has no ability to dissipate even the most minor disruptions, and any incident can be expected to produce a serious breakdown with extensive queueing. Maneuverability within the traffic stream is extremely limited, and the level of physical and psychological comfort afforded the driver is poor.

LOS F -describes breakdowns in vehicular flow. Such conditions generally exist within the queues forming behind breakdown points. Such breakdowns occur for a number of reasons:

- Traffic incidents cause a temporary reduction in the capacity of a short segment, so that the number of vehicles arriving at the point is greater than the number of vehicles that can move through it.
- Points of recurring congestion exist, such as merge or weaving areas and lane drops where the number of vehicles arriving is greater than the number of vehicles discharged.

Table 19. Level of Service Density Ranges

Level of Service	Density Range (pc/mi/ln)*
A	0-10.0
B	10.1-16.0
C	16.1-24.0
D	24.1-32.0
E	32.1-45.0
F	> 45.0

* **pc/mi/ln** – passenger cars/mile/lane

3.17.2 Projected Traffic Conditions for Each Alternative

The following section discusses the projected traffic conditions in the westbound and eastbound peak commute hours for the 1999 (baseline), 2006, 2016, and 2026 future years and details how the westbound and eastbound traffic conditions may be affected by each of the given alternatives. See Tables 20-23 for the average speeds, traffic volumes, and LOS for the previously mentioned model years for each alternative.

3.17.2.1 Westbound Direction (WB)

Alternative 1

The mixed flow alternative entails construction of an additional mainline lane near the freeway center median between the project limits. This additional lane would be unrestricted and require special treatment in the WB direction at the connection with the HOV lane between the Sacramento/Placer County line and Longview Drive.

In the WB direction, the traffic simulation for the mixed flow lane alternative in year 2006 resulted in average speeds ranging between 20-35mph. In 2016, and 2026, the average speeds were similar suggesting that this alternative does not improve traffic congestion much over the future years. However the volumes through the various freeway sections are higher than the Alternative 4 due to the additional capacity. Some mainline section LOS improve to E over the years but not much other improvement is seen. An LOS of E could operate at high speeds but the potential for breakdown is high with even a minimal traffic hazard. The low speeds and unmet demands suggest that providing additional capacity does not mitigate congestion in the project area.

Alternative 2

The HOV lane alternative entails construction of an additional mainline lane near the freeway center median between the project limits. This additional lane would be restricted to multiple occupant vehicles (2+), clean-air vehicles, buses, and motorcycles. In the WB direction this additional lane would connect to the HOV lane between Longview Drive and the Sacramento/Placer County line on I-80.

In the WB direction, the traffic simulation for the HOV lane alternative in year 2006 resulted in average speeds ranging between 40-60mph. In 2016, and 2026, the average speeds ranged between 25-60mph, and 21-60mph, respectively, reflecting an increase in demand volumes over the future years leading to higher levels of congestion in some sections. The volumes getting through the various freeway sections are substantially higher than Alternative 4 or Alternative 1 indicating lower levels of congestion.

Free flow conditions prevail in the HOV lane in all freeway sections, and congestion in the HOV alternative is due to the mixed flow lanes adjacent to the HOV lane. LOS calculations show that the HOV lane would operate at LOS A, B, or C (free flow conditions), while the overall LOS for the mainline sections are at E or F. Again, high mainline speeds are possible at LOS E/F levels but potential for break down would be imminent given the small headways between vehicles in the traffic flow.

Alternative 3

The traffic simulation for this alternative in year 2006 resulted in average speeds ranging between 28-42mph. In 2016, and 2026, the average speeds were similar suggesting that this alternative does not improve congestion much over the future years. The demand volumes in this alternative are the same as in Alternative 4, yet

the volumes through this section of I-80 show slight improvement over the Alternative 4.

Alternative 4

In the WB direction the traffic simulation for Alternative 4 in year 2006 resulted in an average speed ranging between 28-45mph in the various WB mainline sections. In 2016 the average speed ranged between 25-45mph, and in 2026 the speeds ranged between 20-43mph.

Mainline volumes getting through the various sections during the future years either lowered or remained the same from 2006 to 2026 because of recurring congestion. It should also be noted that the demand volumes on I-80 increased from 2006 to 2026. However the mainline volumes decreased from 2006 through 2026 indicating a lack of adequate capacity under Alternative 4.

Table's 20 and 21 summarize the traffic simulator results for the WB peak periods between 6:00-9:00 am for the 1999, 2006, 2016 and 2026 model years.

Table 20. Westbound (AM) Peak Hour Results

Year	Alternative	East of SR 65		SR 65 to Taylor		Taylor to Atlantic		Atlantic to Douglas		Douglas to Riverside	
		S	V	S	V	S	V	S	V	S	V
1999	Existing	50	5120	35	5500	27	7170	20	6055	44	7005
2006	Alternative 4	40	5350	35	6300	35	6615	28	6335	45	6735
	Alternative 3	40	5450	42	6480	28	6755	35	6390	42	6830
	Alternative 2	60	6235	40	7065	45	7600	55	7365	60	7900
	Alternative 1	45	6055	20	6510	30	6975	25	6430	34	6730
2016	Alternative 4	40	5150	25	5815	25	6040	35	6045	45	6620
	Alternative 3	45	6015	25	5895	40	6435	42	6470	47	7000
	Alternative 2	50	6670	25	7155	41	7830	50	7355	55	7960
	Alternative 1	40	6300	25	6900	25	7275	20	6475	35	6645
2026	Alternative 4	27	5250	20	5600	20	6210	25	6245	43	6650
	Alternative 3	37	5950	26	6300	35	6800	40	6185	45	6675
	Alternative 2	45	6885	25	7565	35	8115	40	7405	55	7960
	Alternative 1	40	6585	20	6795	25	7545	25	6285	35	6700

S – speed in mph; *V* – volume in vehicles per hour;

Table 21. Westbound (AM) Peak Hour LOS

Year	Alternative	East of SR 65	SR 65 to Taylor	Taylor to Atlantic	Atlantic to Douglas	Douglas to Riverside
1999	Existing	F	E	F	F	F
2006	Alternative 4	F	E	F	F	F
	Alternative 3	F	E	F	F	F
	Alternative 2	A/E	A/E	B/E	B/F	B/F
	Alternative 1	E	E	E	F	F
2016	Alternative 4	F	F	F	F	F
	Alternative 3	F	E	F	F	F
	Alternative 2	A/F	A/E	B/E	B/F	B/F
	Alternative 1	F	E	E	F	F
2026	Alternative 4	F	F	F	F	F
	Alternative 3	F	F	F	F	F
	Alternative 2	B/F	B/E	C/E	C/F	C/F
	Alternative 1	F	E	E	F	F

Notes: 1. LOS values are based on Highway Capacity Manual (HCM 2000) methodology.
2. In the HOV alternative, X/X :: LOS (HOV lane only) / LOS (all lanes including HOV)

3.17.2.2 Eastbound Direction (EB)

Alternative 1

In the EB direction, the traffic simulation for the mixed flow lane alternative in year 2006 resulted in average speeds ranging between 24-67mph. However, by 2026, the average speeds decrease to between 18-54mph suggesting that this alternative results in slightly lower speeds over the future years. The volumes getting through the various freeway sections are higher than Alternative 4 given the additional capacity. Yet the low speeds and unmet demands at the entry suggest that providing additional capacity does not fully ease congestion in the project area.

Alternative 2

In the EB direction, the traffic simulation for alternative two in year 2006 resulted in average speeds ranging between 23-66mph. In 2016, and 2026, the average speeds ranged between 18-60mph and 24-55mph, respectively. These average speeds reflect an increase in demand volumes over the future years leading to higher levels of congestion in some sections. The volumes through the various freeway sections are significantly higher than the Alternative 4. There is not a pronounced difference in the traffic volumes getting through with Alternative 1 vs. Alternative 2 in this direction. This indicates higher levels of congestion, due to the higher demand volumes into the SACMET model then in the westbound direction (see table 22). Nevertheless, free flow conditions prevail in the HOV lane in all freeway sections, and congestion in the HOV alternative is occurring primarily in the mixed flow lanes adjacent and contiguous to the HOV lane.

Alternative 3

In the EB direction, the traffic simulation for this alternative in year 2006 resulted in average speeds ranging between 18-59mph. In 2016, and 2026, the average speeds were similar suggesting that this alternative does not improve congestion much over the future years. Additional ramp metering at significant entry points control volumes entering the mainline sections resulting in slightly higher mainline speeds and traffic flow volumes. The demand volumes in this alternative are the same as Alternative 4 while the volumes getting through this section of EB I-80 shows slight improvement over the no-build alternative.

Alternative 4

In the EB direction, the traffic simulation for the no-build alternative in year 2006 resulted in average speeds ranging between 21-58mph. In the year 2016 average speeds ranged between 20-64mph, and in 2026 the speeds ranged between 15-50mph.

Again, the mainline volumes through the various sections during the future years either lowered or remained the same from 2006 to 2026 because of recurring congestion. It should also be noted that the demand volumes on I-80 increased from 2006 to 2026. However the mainline volumes decreased from 2006 through 2026 indicating inadequate capacity under the Alternative 4.

Tables 22 and 23 summarize the traffic simulator results for the eastbound peak periods between 3:00-6:00pm for the 1999, 2006, 2016 and 2026 model years.

Table 22. Eastbound (PM) Peak Hour Results

Year	Alternative	Auburn to Douglas		Douglas to Eureka		Eureka to Taylor		Taylor to SR 65		SR 65 to Rocklin	
		S	V	S	V	S	V	S	V	S	V
1999	Existing	44	5160	35	4060	53	5425	60	5000	62	4745
2006	Alternative 4	28	5115	20	4730	53	5490	58	4835	49	4625
	Alternative 3	36	5150	21	4915	52	5540	59	4830	54	4690
	Alternative 2	40	5580	23	4960	61	5560	66	4950	51	4760
	Alternative 1	46	5350	24	5085	62	5600	67	4930	52	4755
2016	Alternative 4	20	4900	20	4725	52	5120	52	4730	55	4090
	Alternative 3	21	5200	44	4760	51	5330	55	4755	53	4560
	Alternative 2	35	6140	18	5075	49	5550	60	4800	56	4670
	Alternative 1	24	5440	19	5315	49	5510	67	5000	48	4980
2026	Alternative 4	19	5355	23	4800	22	5370	25	4820	50	4630
	Alternative 3	20	5480	44	4815	51	5455	38	4880	51	4675
	Alternative 2	31	5980	24	5070	55	5550	55	5030	46	4755
	Alternative 1	23	5550	18	4995	54	5690	54	4940	47	5115

S – speed in mph; *V* – volume in vehicles per hour;

Table 23. Eastbound (PM) Peak Hour LOS

Year	Alternative	Auburn to Douglas	Douglas to Eureka	Eureka to Taylor	Taylor to SR 65	* SR 65 to Rocklin
1999	Existing	F	F	E	E	E
2006	Alternative 4	F	F	E	E	F
	Alternative 3	F	F	E	E	F
	Alternative 2	A/F	A/F	A/D	A/D	E
	Alternative 1	F	F	E	D	E
2016	Alternative 4	F	F	E	F	F
	Alternative 3	F	F	E	E	F
	Alternative 2	B/F	B/F	B/D	A/D	E
	Alternative 1	F	F	E	E	F
2026	Alternative 4	F	F	F	F	F
	Alternative 3	F	F	E	E	F
	Alternative 2	C/F	C/F	A/D	A/D	E
	Alternative 1	F	F	E	F	F

Notes: 1. LOS values are based on Highway Capacity Manual (HCM 2000) methodology.
 2. In the HOV alternative, X / X::LOS (HOV lane only) / LOS (all lanes including HOV lane)
 * No HOV lane

3.17.3 Conclusions of Traffic Analysis

The addition of travel lanes, installation of auxiliary lanes, extension of existing lanes, and implementation of traffic operations systems would all contribute to the reduction of traffic congestion on I-80. However, the level of improvement varies between the alternatives. Both Alternative 1 and Alternative 2 are expected to achieve the goal of increased capacity and reduced congestion. Alternative 3 would improve the traffic characteristics as well, but to a significantly lesser extent. Traffic simulations and operational analyses have been conducted for each alternative. With Alternative 4, by 2006, demand would exceed capacity at all locations within the project limits and existing operations would continue to deteriorate. Of all the analyses performed, the HOV lane alternative showed better results as compared to the other alternatives for all the future project years. Freeway speeds and flow volumes were higher if not comparable to Alternative 1. However, the efficiency of the freeway increases as HOV lanes by themselves operate at superior LOS and provide a dependable, predictable trips for buses, vans and carpools.

3.17.3.1 Alternative 1

The mixed-flow alternative shows higher volumes flowing through this section of I-80 compared to either Alternative 3 or Alternative 4, especially in 2016 and 2026. The mixed flow Alternative compares very closely in speeds and volumes with the HOV Alternative in all years modeled, particularly in the WB direction. There is no marked improvement in speeds and the simulations show congested sections throughout the study area, especially approaching the interchange areas at both Auburn and Douglas Boulevard. In the EB direction, this congestion can be attributed to very high incoming volumes associated with the added capacity of this alternative and the fact that from 48 percent to 57 percent of the volume entering the study section is exiting in the EB direction prior to reaching SR 65. In other words, approximately one-half of the incoming traffic west of Auburn Blvd. will be exiting at Auburn, Douglas, Eureka, Taylor and SR 65, thus creating a weaving section between these limits. This weaving section results in congested areas near the interchanges, lower speeds, and unmet demands at the entry points. Because no HOV lanes are designated for Alternative 1, the time saving incentive for commuters to rideshare or to use mass transit is reduced. Without the incentive, the proportion of single occupancy vehicles among commuters may increase, escalating the traffic freeway demand.

3.17.3.2 Alternative 2

Alternative 2 provides the best LOS improvement among all the alternatives. Traffic modeling shows that the Alternative 4 results in mostly LOS F for all lanes by 2006. With Alternative 2 and its HOV lanes, the level of service is predicted at LOS A and LOS C, in 2006, and 2026, respectively. With Alternative 1 and its mixed flow lanes, the LOS improvement is less and the level of service ranges from D to F between 2006 and 2026. Alternative 3 and its auxiliary lanes are predicted to perform even worse; the LOS is predicted between LOS E and F, in both 2006 and 2026.

Alternative 2 also would provide consistent lane assignments in the area with an extension of the HOV lane from Watt Avenue in Sacramento to near the Sacramento/Placer County line (currently under construction with target completion date of 2005). Maintaining a longer and consistent HOV lane designation throughout the length of I-80 would create a greater time savings incentive for carpoolers and transit riders. Consistent HOV designations would eliminate the need for potentially confusing lane designation transitions between HOV lanes and mixed flow lanes. In addition, Alternative 2 allows flexibility in determining the best time periods to provide HOV lanes as incentive for drivers to utilize carpool or mass transit. HOV

lanes encourage usage of carpool vehicles, vans, and buses. With a higher occupancy rate on HOV lanes, vehicles would carry more people, improving the efficiency of the freeway. Improved capacity can lead to fewer congestion-related accidents. In addition, Alternative 2 would have a significant positive impact on transit travel times between Roseville/Rocklin and Sacramento. Because mass transit vehicles can use HOV lanes, the result would be a substantial improvement in travel times for buses.

The Operational Status Report for the HOV lanes on State Route 99, a similar facility, from Elk Grove to downtown Sacramento, indicates that in the northbound direction, the HOV lane consistently carried more people in fewer vehicles. Traffic counts in 1999 indicated that the HOV lane moved as many as 1,640 more people per hour than the average mixed flow lanes during the peak hour in the northbound direction, which is actually an increase of 230 more people per hour from the 1998 figures. In the southbound direction, traffic volumes in the afternoon commute are more spread out, thus resulting in lower volumes over a longer peak period. Data also indicates that there is a significant time savings, about 3 to 12.5 minutes, travelling at 55mph free flow speed on the HOV lane rather than travelling on the mixed flow lanes at actual slower peak period speeds. In summary, experience with HOV lanes in the Sacramento region indicate higher efficiency in terms of person movement than mixed flow lanes. For this project, HOV lanes are predicted to outperform all other proposed alternatives.

3.17.3.3 Alternative 3

Minor improvements are expected with Alternative 3, but are not of the magnitude expected with Alternatives 1 or 2. The short-term benefits of auxiliary lanes include smoother transitions for traffic traveling between onramps, offramps, and the mainline. However, the mainline freeway capacity would still reach capacity in 2005 since Alternative 3 proposes no additional mainline capacity improvements. In terms of increasing capacity, additional auxiliary lanes cannot substitute for additional mainline lanes.

Like Alternatives 1 and 2, the TOS elements in Alternative 3 also improves some operational aspects of the freeway. However, the TOS elements by themselves in Alternative 3 are simply effective supplements to capacity improvements, rather than primary capacity improvements, as in Alternatives 1 and 2.

3.17.3.4 Alternative 4

This alternative would likely result in operational incompatibilities. The Sacramento HOV lane project (EA 03-354601) from Watt Avenue to near the Sacramento/Placer County line along I-80 is expected to be fully constructed by 2005. If I-80 east of the project limits remains unimproved, congestion for eastbound traffic toward Roseville and Rocklin would likely increase significantly. Congestion is expected to increase at 0.64 km (0.4 miles) west of the Sacramento/Placer County line where the number of mainline lanes reduces from five to four. The congestion is further compounded by an existing lane decrease 1.2 km (0.75 miles) downstream at Riverside Avenue/Auburn Boulevard which further reduces the lanes from four to three. The close proximity of the two lane drops and interchange ramps within a short 1.8 km (1.1 mile) distance creates operational problems. If the capacity of the freeway remains unimproved, the operations would continue to deteriorate. Furthermore, the configuration would continue to be nonstandard, in nonconformance with Highway Design Manual Section 404.6 – minimum recommended spacing of 1 kilometer for lane reductions near interchanges.

With Alternative 4, existing queues during peak hours for the eastbound and westbound directions would continue to extend farther upstream of the flow. The effects of congestion are cumulative since queued flows on the mainline obstruct onramps and offramps and can cause ramp queues that impact local surface street traffic. The amount of vehicle delays, in turn, would reverberate upstream through the freeway system including the mainline, onramps, offramps, and connectors. Areas such as the bottleneck section in the eastbound direction at Riverside Avenue/Auburn Boulevard would continue to experience increasingly long queues. Congestion may increase in those sections of freeway, potentially leading to a higher rate of congestion-related accidents. Without any highway improvements in this area, anticipated growth in the future is expected to push the limits of the westbound congestion further east beyond the limits of existing congestion.

Alternatives 1 through 3 would all have beneficial effects on I-80 by reducing traffic congestion and delay through the project area. Therefore significant direct, indirect, long-term or unavoidable impacts on transportation from the proposed project are not anticipated. There will be short-term traffic delays as a result of construction; however, given the current congestion and delays through this segment of I-80, the disruption of traffic flow as a result of construction is considered less than significant.

3.18 Visual/Aesthetics

This section presents the results of a Visual Impact Assessment (VIA) that analyzed the effects on visual and scenic resources of the proposed freeway improvements. CEQA establishes that it is the policy of the state to take all action necessary to provide the people of the state “with...enjoyment of *aesthetic*, natural, scenic and historic environmental qualities.” [CA Public Resources Code Section 21001(b)]

Visual Assessment Criteria

Descriptions of visual character and quality in the VIA relied on the following standard terms:

- Vividness-The visual power or memorability of landscape components as they combine in striking or distinctive visual patterns.
- Intactness-The visual integrity of the natural and artificial landscape and its freedom from encroaching elements. Intactness can be present in well-kept urban and rural landscapes, as well as in natural settings.
- Unity-The visual coherence and compositional harmony of the landscape considered as a whole; it frequently attests to the careful design of individual components in the artificial landscape.

Vividness, intactness, and unity are the basic components used to describe the visual character and quality for a VIA. The aforementioned terms are used to objectively rate a landscapes visual quality, using the following equation:

$$\text{Visual Quality} = \text{Vividness} + \text{Intactness} + \text{Unity} / 3$$

Each qualifying descriptor is evaluated independently and each quality is assigned a rating from 1-7. On this scale 1= very low, 4 = average/moderate, and 7 = very high. The overall Visual Quality (VQ) follows the same 1-7 rating scale.

Viewer Groups

- Freeway Users- the largest groups of effected viewers are those traveling along I-80. Frequent viewers include truck drivers and residents commuting to and from work.
- Recreationists- I-80 is a recreational route, therefore this special subset of roadway users could be either traveling to local facilities or passing through to destinations out of the area.
- Residents- this group is most likely to be affected by the proposed project because of their proximity to the freeway. Residents currently overlook the interstate and are separated from it by fences. Sound walls are proposed along the residential property lines and residents accustomed to the traffic and sight of I-80 will have their existing view blocked.

3.18.1 Affected Environment

The region lies in a transitional zone containing both the flat valley floor and the rolling hills of the western slope of the Sierra Nevada. The dominant natural vegetation is annual grassland and native oak trees occurring in varying densities. Water features in the region include Folsom Lake and the American River. A mix of agricultural, developed, and natural landscapes characterize the region. The landscape pattern is influenced by development sprawling from existing cities and major roadways in the region.

Development occurs along both sides of I-80, which bisects the cities of Roseville and Rocklin and passes through the northern portion of the city of Citrus Heights. Land uses include residential, commercial, industrial, and public. Development occurs most heavily within city limits and at freeway interchanges. Rural ranchettes lie to the east and the north. Other developed features include the Union Pacific Railroad running parallel to I-80 on the north, utility lines, and electrical towers. Open space consisting of annual grasslands and native oaks is present, especially at the eastern end of the project area near the I-80/SR 65 interchange. Cirby Creek, Linda Creek, Dry Creek, and Miner's and Secret Ravines are the primary water features in the project area. The water is not visible from I-80 at most locations, due to its lowered elevation and the visual obstruction of mature vegetation.

Because of the visual obstructions caused by overhead utility lines and towers, and because of the commonality of the visual character of development in the region, the visual quality of the project area is low to moderate in vividness, intactness, and unity with VQ ratings from 2-4 depending the exact location of the viewer within the project limits.

3.18.2 Impacts

Within the project limits, I-80 is not eligible or designated a scenic highway and the proposed project would not directly or indirectly damage any scenic resources significantly. However, some negative impacts may occur as a result of the proposed project and include the following: potential glare and light impacts; visual impacts resulting from vegetation removal.

3.18.2.1 Permanent changes in light and glare

The proposed railings and light standards would be galvanized steel; no reflective surfaces are proposed. The proposed sound walls, retaining walls, and Type 60 barriers would be masonry and concrete with low sheen and no reflective surfaces.

Additional nighttime lighting has been proposed for the project. The increased lighting would improve safety for night travel, but would also increase the distance from which the interchanges can be seen at night. Some residences along I-80 may be affected by the highway lighting, depending on where these fixtures are located. In addition, lighting added near open space areas could potentially affect wildlife.

All the build alternatives would have the same effects from the proposed changes in light and glare with the exception of Alternative 3. Alternative 3 would have the fewest effects on light and glare because only three interchanges would be modified which reduces the number of lights and other freeway modifications. Nevertheless, all build alternatives would have the same mitigation, minimization, and avoidance measures.

3.18.2.2 Permanent visual changes resulting from vegetation removal

Existing highway landscaping would be removed throughout the project site at interchanges and areas to be widened for additional lanes. The removal of mature oak trees may have the greatest visual impact of all the vegetation to be removed. Currently there are approximately 150 trees (including oaks) total scattered throughout the entire project area, including those that may be trimmed rather than be removed.

3.18.2.3 Permanent changes to views of and from SR 65 east into the City of Rocklin

Views east of SR 65 are likely be subject to the greatest visual impact due to the proximity of residences north of I-80 and the prevalence of mature oaks throughout this unit. Users of I-80, adjacent residents, and viewers from vantage points such as the Taylor Road overpass, SR-65 connector, and properties that look onto the project site will be subject to the aesthetic changes resulting from the proposed project.

Views into the project area from adjacent residences to the north will be blocked by proposed sound walls. Landowners along this segment currently have wooden or a chain-link fence along their property lines which back up to the I-80 right-of-way. These viewers are accustomed to seeing the open space between their property and the expansive freeway beyond. Some residents may also have views of the oak woodland on the south side of I-80. The proposed project would add a 3.7 to 4.3m (12 to 14ft) soundwall at the property line of these residences. The sound wall would obstruct views, potentially affect solar exposure, and shorten the existing line of sight. The vividness would not change because a majority of the oak woodland area that adds to the memorability of the landscape unit would remain intact. However, intactness and unity would each decrease as a result of the addition of sound walls and the loss of large oaks. See Figures 6-8 for representations of the proposed impacts.

Figure 6. Visual simulation of proposed freeway improvements near Atlantic Street for Alternatives 1 & 2

Figure 7. Visual simulation of proposed freeway improvements east of SR 65 connector

Figure 8. Cross-section of existing conditions vs. where the proposed noise barriers are planned.

3.18.3 Mitigation, Minimization & Avoidance Measures

Through the implementation of the following mitigation, minimization and avoidance measures, there will not be any significant direct, indirect, long-term or unavoidable impacts on aesthetics or visual resources within the project area. There may be short-term impacts resulting from vegetation loss and placement of new structures, however these impacts will be mitigated to a level of less than significant through the following measures.

3.18.3.1 Permanent changes in light and glare

1. Areas in front of barriers/sound walls will be planted with appropriate vegetation to reduce reflective glare. Plant species will be determined by the project Landscape Architect, with coordination from appropriate City jurisdictions.
2. In locations of potential sound walls, the project Landscape Architect will coordinate with the City of Rocklin to create aesthetically pleasing designs and treatments that will benefit all parties involved.
3. An earthen berm will be used in place of or in conjunction with the proposed sound wall in some locations. The berm will be planted and maintained by Caltrans. Caltrans will coordinate with the City of Rocklin as appropriate.
4. Luminaires would be cutoff-type fixtures that cast low-angle illumination to minimize incidental spillover of light onto adjacent private properties and undeveloped open space. Fixtures that project upward or horizontally will not be used.
5. Luminaire lamps shall provide good color rendering and natural light qualities. Low- pressure and high-pressure sodium fixtures that are not color corrected will not be used. Luminaire intensity will be the minimum allowable for traffic safety.
6. Luminaire mountings will be downcast and the height of the poles minimized to reduce potential for backscatter into the nighttime sky and incidental spillover of light into adjacent private properties and undeveloped open space. Luminaire mountings will have nonglare finishes.

3.18.3.2 Visual Changes from vegetation removal

1. Oak trees that are greater than or equal to 6 inches in diameter at breast height (dbh) that are removed as a result of the proposed project will be replaced at a ratio of one seedling for every 1 inch of tree dbh removed.
2. In areas of potential soil erosion, native re-seeding will also help control erosion through plant establishment.
3. The revegetation report species composition will reflect species that are native and indigenous to the project area. The species list should include trees, shrubs, and a herbaceous understory of varying heights, as well as evergreen and deciduous types. Plant variety will increase the effectiveness of the screen by providing multiple layers, seasonality, more diverse habitat, and reduced susceptibility to disease. Recommended tree species include valley oak (*Quercus lobata*), blue oak (*Q. douglasii*), and interior live oak (*Q. wislizenii*). The planting design should be randomized to mimic natural patterns.

3.19 Historical Resources

The project's Area of Potential Effects (APE) contains 23 historical properties, one of which is formally evaluated in the Historic Architectural Survey Report (HASR). The remaining 22 properties were treated in accordance with the "Caltrans Interim Policy for the Treatment of Buildings Constructed in 1957 or Later".

None of the properties appear to be eligible for the National Register of Historic Places (NRHP). Additionally, Caltrans has evaluated the resources in accordance with Section 15064.5(a)(2)-(3) of the CEQA Guidelines, using the criteria outlined in Section 5024.1 of the California Public Resources Code, and determined that none are historical resources for the purposes of CEQA. Moreover, there does not appear to be the potential for a historic landscape or district in the project area. Therefore, none of the four proposed alternatives would have any significant direct, indirect, short-term, long-term or unavoidable impacts on historical properties or resources.

3.20 Archaeological Resources

Archaeological or cultural resources as used in this document refers to historic and archaeological resources. The primary federal laws dealing with historic and archaeological resources include:

- The National Historic Preservation Act, as amended, (NHPA) sets forth national policy and procedures regarding "historic properties" -- that is, districts, sites, buildings, structures and objects included in or eligible for the National Register of Historic Places. Section 106 of NHPA requires federal agencies, or agencies with federal funding, to consider the effects of their undertakings on such properties, following regulations issued by the Advisory Council on Historic Preservation (36 CFR 800). FHWA is participating in this project and must meet the consultation requirements of Section 106 of the National Historic Preservation Act. The proposed project, therefore, is a federal undertaking subject to 36 CFR Part 800, implementing regulations for Section 106.
- Under California law, cultural resources are protected by CEQA as well as Public Resources Code Section 5024.1, which established the California Register of Historic Places. Section 5024.5 requires state agencies to provide notice to, and to confer with the State Historic Preservation Officer (SHPO) before altering, transferring, relocating, or demolishing state-owned historic resources.
- If human remains are discovered, State Health and Safety Code Section 7050.5 states that disturbances and activities shall cease. The County Coroner must be notified of the find immediately so that he/she may ascertain the origin. Pursuant to Public Resources Code Section 5097.98 if the remains are thought to be Native American, then the coroner will notify the Native American Heritage Commission (NAHC) who will then notify the Most Likely Descendent (MLD). The MLD may inspect the remains with the approval of the landowner or the landowners' authorized representative. The MLD must complete this inspection within 24 hours after notification by the NAHC. The MLD may recommend scientific removal and nondestructive analysis."

A literature and records search was conducted at the North Central Information Center of the California Historical Resources Information System. The Native American Heritage Commission was requested to review the Sacred Lands Files for

any areas of Native American concern within or adjacent to the project. No cultural resources were identified by these sources.

Correspondence was also sent to Native Americans who have been identified as having an interest in projects within this area. The Sacramento County Historical Society, Genealogical and Historical Council, Placer County Museum, and the Roseville Historical Society were also contacted. No cultural resources were identified by these sources.

A systematic pedestrian archaeological survey of the APE for this project was also conducted. No archaeological resources were discovered within the APE during studies for this project, and therefore this project will not affect an archaeological resource and is in compliance with all the aforementioned applicable laws. The proposed project will not have any significant direct, indirect, short-term, long-term or unavoidable impacts on archaeological resources. If artifacts are discovered during excavation, all earth moving activity within and around the immediate discovery area will be diverted until a qualified archaeologist can assess the find.

3.21 4(f) Resources

Section 4(f) of the Department of Transportation Act of 1966, codified in federal law at 49 U.S.C. 303, declares that “it is the policy of the United States Government that special effort should be made to preserve the natural beauty of the countryside and public park and recreation lands, wildlife and waterfowl refuges, and historic sites.”

Section 4(f) specifies that the Secretary [of Transportation] may approve a transportation program or project . . . requiring the use of publicly owned land of a public park, recreation area, or wildlife and waterfowl refuge of national, State, or local significance, or land of an historic site of national, State, or local significance (as determined by the federal, state, or local officials having jurisdiction over the park, area, refuge, or site) only if:

- there is no prudent and feasible alternative to using that land; and
- the program or project includes all possible planning to minimize harm to the park, recreation area, wildlife and waterfowl refuge, or historic site resulting from the use.

Section 4(f) further requires consultation with the Department of the Interior and, as appropriate, the involved offices of the Departments of Agriculture and Housing and Urban Development in developing transportation projects and programs which use lands protected by Section 4(f). If historic sites are involved, then coordination with the State Historic Preservation Officer is also needed.

3.21.1 Section 4f Determination

The proposed project would be constructed within existing Caltrans ROW or on private, non-recreational property to be acquired. The proposed project's impacts on the proposed bikeway through Miner's Ravine would not constitute a "use" under Section 4(f), since this bikeway has been developed in order to facilitate both recreational and commuter cyclists and pedestrians (see attachment G, for City of Roseville support for this determination). In addition, coordination between the City of Roseville and Caltrans has resulted in alterations to the planned bikeway that would avoid foreseeable impacts to the bikeway as a result of the proposed project.

During construction

Cirby Park and Woodside Park, as publicly owned areas designated primarily for recreational purposes, are subject to the protections of Department of Transportation Act Section 4(f). Section 4(f) regulates both direct and "constructive use" of publicly owned recreational facilities. Under 23 CFR 771.135 (p)(2), the FHWA describes constructive use of a 4(f) resource as occurring "when the transportation project does not incorporate land from a section 4(f) resource, but the project's proximity impacts are so severe that the protected activities, features, or attributes that qualify a resource for protection under section 4(f) are substantially impaired. Substantial impairment occurs only when the protected activities, features, or attributes of the resource are substantially diminished."

The FHWA has determined that a constructive use does not occur when:

- (ii) The projected traffic noise levels of the proposed highway project do not exceed the FHWA noise abatement criteria as contained in 23 CFR part 772, or the projected operational noise levels of the proposed transit project do not exceed the noise impact criteria in the Urban Mass Transit Authority guidelines.

(iii) The projected noise levels exceed the relevant threshold in paragraph (p)(5)(ii) of this section because of high existing noise, but the increase in the projected noise levels if the proposed project is constructed, when compared with the projected noise levels if the project is not built, is barely perceptible (3 dba or less).

Construction of soundwalls in Rocklin would require a temporary construction easement for work in Woodside Park. At a meeting between Caltrans and representatives of the City of Rocklin on July 26, 2002, the Director of the City's Community Services and Facilities Department endorsed the idea of soundwalls adjacent to this park in order to reduce noise levels in the park. The City of Rocklin prepared a letter (see attachment H) verifying that construction would be of short duration, would not change the ownership of the land, and would not result in adverse impacts to activities, features, or attributes of the park that are important to its recreational purpose. In addition, the Noise Study Report prepared for this project states that the Alternatives 1 through 3 are predicted to result in an increase in noise of less than 3dba relative to existing conditions and therefore there will not be an impact on Cirby Park. Thus, Section 4(f) will not apply to temporary construction on either of these sites and there will not be any significant direct, indirect, short-term, long-term or unavoidable impacts on Section 4(f) resources.

Chapter 4 Cumulative Impacts

4.1 Introduction

Cumulative impacts are those that are produced by the aggregation of individual environmental impacts resulting from a single project or from two or more projects in conjunction. Analysis of cumulative impacts is required under the California Resources Agency Guidelines, Title 14, Sections (§) 15130 and 15355. The following is an excerpt from § 15355 and explains what cumulative impacts are:

Cumulative impacts refer to two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts. The cumulative impact from several projects is the change in the environment, which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time.

CEQA details two ways in which to evaluate cumulative impacts. One of these is to summarize growth projections in an adopted general plan or in a prior certified environmental document. The second method, that will be utilized for this DEIR, involves the compilation of a list of past, present, and reasonably foreseeable future projects producing related or cumulative impacts [Section 15130 (b)1(A) of the CEQA Guidelines]. The cumulative impacts from past, present, and future projects considered for this analysis are discussed in Section 4.3.

Cumulative impacts can result from individually minor, but collectively significant actions taking place over a period of time. A cumulative effect related to scenic resources, water quality, air quality, noise, biological resources: oak woodland habitat, and riparian habitat adjacent to I-80, in combination with the other projects shown in Figure 9, could be considered significant. However through the implementation of re-vegetation plans, mitigation, minimization, and avoidance measures as described in the mitigation monitoring program (see Appendix B) there will not be a cumulative negative effect on any sensitive resources.

4.2 Relevant Cumulative Projects

Four additional projects were looked at for the cumulative analysis along the I-80 corridor. Each of these additional projects is summarized below, also please see Figure 9 for the Cumulative Impact Study Areas (CISA) mapping.

4.2.1 State Route 65 – Lincoln Bypass

This proposed project is a westerly bypass along SR 65 around the City of Lincoln. The project consists of a mixed two and four-lane facility extending approximately ten miles from Industrial Blvd. in Lincoln to just north of Sheridan. The purpose of the project is to relieve congestion and improve safety on existing SR 65 in the vicinity of the City of Lincoln and provide for a regional traffic solution to accommodate projected traffic volumes for the year 2020. Currently SR 65 in the City of Lincoln is a “main street” highway lending to increased congestion and accidents, with available capacity being exceeded by 2005. The CTC programmed the Lincoln Bypass project being advertised for construction January 2005, with construction lasting between 2 to 4 years. Currently this project is still in the environmental document phase.

4.2.2 Sierra College Boulevard Improvements

This future project calls for improvements at Sierra College Boulevard that includes widening the roadway to four or six lanes from SR 193 to the Sacramento County line and reconstructing the interchange at I-80. The purpose of the project is to correct current traffic operational deficiencies on Sierra College Blvd., to provide needed capacity for future growth within the City of Rocklin and the South Placer County region, and to provide vertical and horizontal clearance for the future widening of I-80 at the interchange. This project is currently in the environmental approval stage of project development.

4.2.3 I-80/Sacramento High Occupancy Vehicle Lanes

The purpose of the project is to increase the carrying capacity and improve the safety of the highway. This project is currently under construction and involves adding HOV lanes to both directions of I-80 in Sacramento County between Watt Avenue and the Sacramento/Placer County line. In order to achieve this, the Madison Avenue on and off-ramps were widened for carpool lanes and the Madison Avenue over-crossing is being expanded from four to six lanes. In addition, the Regional Transit Light Rail Station near Watt Ave., and the Watt Ave. off-ramp from eastbound I-80

were adjusted to accommodate the addition of the new carpool lanes. The expected completion date is Spring 2005.

4.2.4 Douglas Boulevard/I-80 Interchange Improvement Project

This project would modify the Douglas Boulevard/I-80 interchange by adding a right turn overpass from eastbound Douglas to southbound Sunrise, and would build an underpass from northbound Sunrise to eastbound I-80. These improvements will remove traffic from the intersection of Sunrise/Douglas, thereby reducing congestion at this busy intersection. The project also includes a two-lane on-ramp from westbound Douglas to westbound I-80. This project is expected to start construction in Spring 2003 and conclude by Fall 2005.

Figure 9. Cumulative Impact Study Areas (CISA)

4.3 Cumulative Analysis

4.3.1 Water Quality

During project construction, all these adjacent roadway projects may temporarily contribute to erosion and sedimentation in Cirby Creek and Miners Ravine. In addition, the construction of these five projects would result in increased impervious surface area creating the potential for less infiltration of rainfall into the ground, causing total storm water runoff volumes to increase. The increase in the highway runoff volume has the potential to degrade water quality of the receiving surface waters by increasing peak storm water flow rates. Moreover, the increased storm water runoff volume would likely be contaminated with pollutants associated with paved surfaces.

As a solution to the above, the SWRCB has issued the Caltrans Statewide NPDES Storm Water Permit, which covers all Caltrans facilities in the State. The Statewide Storm Water Management Plan (SWMP) prepared pursuant to this permit outlines methodology for selection and implementation of BMPs to mitigate adverse impacts to water quality. Selection of the appropriate BMPs will be guided by the SWMP in an effort to reduce impacts to water quality to the maximum extent practicable. These BMPs fall into several categories: Category IA (Maintenance BMPs), Category IB (Design Pollution Prevention BMPs), and Category III (Treatment BMPs), and are expected to mitigate any cumulative impacts to water quality.

4.3.2 Air Quality

Before adopting the MTP and MTIP, SACOG performed a quantitative analysis to determine if implementation of the set of projects included in these documents would result in violations of harmful pollutant levels identified in the CAAQS and NAAQS, especially the O₃ and PM₁₀ air quality standards due to lack of attainment status in Placer and Sacramento Counties. Based on this analysis, SACOG has concluded that implementing the set of projects included in the MTP and MTIP would not result in a violation of the O₃ standard and would result in reduction of PM₁₀ emission. The proposed I-80 freeway improvement project is a component of the set of projects included in the MTP and MTIP. In addition, as described in Section 3.3 of this document, the project would have only short-term minimal impacts on AAQS during construction. Therefore, the project is considered to have no cumulative impacts.

4.3.3 Noise

The noise environment within this corridor is dominated by traffic traversing I-80. Sound levels adjacent to major highways typically exceed 69 decibels. Sound walls are proposed in sensitive land use areas where a noise impact occurs and is deemed reasonable and feasible. Each of the alternatives will only result in a maximum noise increase of 2 decibels and less than a 3 dba increase/decrease is barely perceptible to the human ear.

Although noise abatement will be implemented at certain locations, the projects will result in noise impacts in some locations where abatement is not reasonable and/or feasible. Considering I-80 is already the predominate noise source, any cumulative noise effects of this project in conjunction with existing noise sources and near term future projects would be less than significant.

4.3.4 Biological Resources

As defined by the USFWS, interdependent and interrelated impacts refers to the effects of the action, both direct and indirect, together with the effects of other activities that are interrelated or interdependent on the proposed action. Examples such as road widening that is part of a larger planning effort that facilitates residential growth or development can be both interrelated and interdependent.

The geographic scope of cumulative impacts varies by technical area. The CISA for biological resources of this project consists of the Valley-American hydrologic unit, Coon-American hydrologic area, Lower American hydrologic sub-area, which consists of 55,423 hectares (136,953 acres).

4.3.4.1 Riparian Habitat

Riparian corridors such as Miner's Ravine and Cirby Creek are recognized as valuable resources and designated in local planning documents as open space areas, generally protected from encroachment. Although impacts to these resources will likely be restricted to transportation and utility crossings (bridged to help minimize impacts and allow wildlife movements), subtle impacts are still likely to occur and may be difficult to offset through conventional mitigation measures.

Wetland habitats within the CISA include vernal pools, fresh emergent wetlands and valley foothill riparian systems. The major development projects currently proposed, or under construction, in the CISA may have substantial wetland impacts in Placer and Sacramento Counties. It is expected that all wetland impacts would be

compensated within the region resulting in a “no-net-loss” of wetland habitat pursuant to EPA Clean Water Act guidance and ACOE Section 404 wetland and Waters of the United States permitting policies. It is anticipated that habitat mitigation plans will preserve and create natural habitats within the region collectively and would facilitate habitat continuity and sustainability within the region.

It is unlikely that the proposed project will contribute to cumulative impacts for Central Valley steelhead and Central Valley fall run Chinook salmon due to permit restrictions and avoidance measures such as the following: not allowing construction work to commence while salmon and steelhead are potentially in the streams.

4.3.4.2 Oak Woodland Habitat

Oak woodlands are considered prime residential development areas due to their aesthetic quality. Development is often planned around the individual trees, and measures are generally taken to protect trees during construction. While individual oak trees may persist in developed settings, there is still a risk of tree loss due to over-watering, disease or compaction of soil within the root zone. In a developed setting (such as the oaks along the project route), the woodland functions as a fragmented habitat with wildlife and plant populations often isolated by roads, homes, ornamental landscaping, or other related uses. Continued growth and development within the project area will cause the fragmentation of continuous large tracts of wildlife habitat into smaller, more isolated blocks. This habitat fragmentation will lead to reduced movements and impaired dispersal of young, and may ultimately result in small, isolated populations of some species. Over time, this may even lead to elimination of some species from the CISA.

The cumulative effects from this and other projects include further loss of nesting, cover, and feeding habitat. This habitat loss is considered less than significant due to its lower quality (i.e. adjacent to freeway and urban areas), tree sizes (most are pole to small tree size) and existing fragmentation.

4.3.5 Growth Inducement

The proposed projects support the existing pattern of development in this region. The projects proposed for this area would have the cumulative effect of improving accessibility between the region’s employment center – the City of Sacramento – and the largely residential areas in southwestern Placer County, particularly during commuting periods. According to the California Department of Finance, Placer

County was the fastest growing county in California in 2001, therefore these projects are being proposed to compensate for the rapid growth that has already occurred and is currently occurring in this area through locally adopted General Plans and zoning. See also Section 3.13 on Growth Inducement in this DEIR.

4.3.6 Transportation

Overall, congestion delay on I-80 has significantly increased since 1999 and 2000. This is due to an increase in commercial and residential developments along I-80 in the Roseville and Rocklin areas. The reduction of mainline lanes from four lanes to three lanes at Douglas Blvd. Interchange has resulted in a “bottleneck” condition that contributes to congestion delay at this segment. Without any highway improvements in this area, the anticipated growth will put more pressure on the mainline capacity by infusing greater volumes of traffic into this bottleneck area.

The I-80 Project is being affected by other highway improvement projects in the region. The Douglas Blvd/I-80 Interchange and the Sierra College Blvd. Improvements are designed to improve traffic flow between I-80 and the local streets. The SR 65 Lincoln Bypass is designed to increase safety and accommodate projected traffic volumes for 2020. The Sacramento HOV Lanes will improve traffic flow and provide incentives for individuals to carpool or use mass transportation (buses with connections to light rail).

The I-80 Project is in the middle of these four projects and can greatly influence their effectiveness. The interchange improvements and the less-congested traffic from the Lincoln Bypass will be more effective if I-80 has improved traffic circulation. Alternative 2 (environmentally preferred in this DEIR) would connect this project to the Sacramento HOV lanes and increase the effectiveness of carpooling and mass transportation campaigns in the region.

Traffic congestion is a problem faced by every urban community. As freeways have become more expensive to build, attention has been given to other ideas for increasing capacity. One alternative to improve the efficiency of the existing highway system is by increasing its people carrying capacity. As part of Transportation System Management programs adopted around the country, HOV lanes offer this possibility.

There is growing support for HOV lanes because they assure daily, reliable travel times to carpools, vanpools, buses, and other HOV lane users. Furthermore, HOV

facilities make it easier to live and work where people want. In addition, the HOV Alternative will allow connectivity and consistency with future eastbound lane extensions on I-80. A coordinated approach among all stakeholder agencies is required to make HOV lanes work. These include, but are not limited to, provision of a system-wide network of HOV lanes, and increasing the number of park and ride lots, ride sharing programs, the development of light rail transit, heavy rail, and commuter rail systems with increased utilization by transit services connections at key transit boarding points.

The proposed project and other projects within the CISA will aid in relieving traffic congestion and improve the overall transportation network in southwestern and northeastern Placer and Sacramento Counties respectively.

4.3.7 Visual/Aesthetics

The proposed project in conjunction with the other developments would only contribute incrementally to a cumulative impact on the area's visual quality. Currently the visual environments of the analyzed projects are heavily congested and have roadway, residential, or commercial structures dominating the landscape.

Mitigation measures can be incorporated into each project that would serve to offset some of the visual impacts. For example, on the proposed project, sound wall views will be mitigated with brick patterns and landscape plantings. Landscape plantings will also be used along the ROW and at interchanges. As for tree removal selective removal and trimming will be implemented, especially with regards to native oak trees. A less than significant temporary visual loss will occur until smaller replacement trees and revegetation efforts have time to mature to replace the vegetation that is planned for removal.

At this time there is also a Caltrans organized I-80 corridor theme in the planning process. This theme will enhance the aesthetics of the existing structures and improve the view shed of the corridor for highway drivers by utilizing the same aesthetic treatments for noise barriers, bridges, and other freeway structures that may give this corridor segment a homogenous visual quality that will integrate the freeway into the regional environment.

Chapter 5 California Environmental Quality Act Evaluation

5.1 Determining Significance Under CEQA

The CEQA Guidelines Section 15064 (b) broadly defines a significant effect on the environment as a substantial or potentially substantial adverse change in the physical environment. For the purpose of this document pertinent criteria from the CEQA Guidelines Appendix G were used to establish significance criteria for each of the alternatives.

5.2 CEQA Environmental Checklist

The following checklist identifies physical, biological, social, and economic factors that might be affected by the proposed project. The CEQA impact levels include potentially significant impact, less than significant impact with mitigation, less than significant impact, and no impact. Please refer to the following for detailed discussions regarding impacts:

CEQA:

- Guidance: Title 14, Chapter 3, California Code of Regulations, Sections 15000 et seq. (http://www.ceres.ca.gov/topic/env_law/ceqa/guidelines/)
- Statutes: Division 13, California Public Resource Code, Sections 21000-21178.1 (http://www.ceres.ca.gov/topic/env_law/ceqa/stat/)

CEQA requires that environmental documents determine significant or potentially significant impacts. In many cases, background studies performed in connection with the project indicate no impacts. A “no impact” reflects this determination. Any needed discussion to address resource specific impacts is in the corresponding Chapter 3 section of this DEIR.

CEQA			
Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact

AESTHETICS - Would the project:

- | | | | | |
|--|--------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| a) Have a substantial adverse effect on a scenic vista? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c) Substantially degrade the existing visual character or quality of the site and its surroundings? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

AGRICULTURE RESOURCES - In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. Would the project:

- | | | | | |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Conflict with existing zoning for agricultural use, or a Williamson Act contract? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

AIR QUALITY - Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:

- | | | | | |
|--|--------------------------|-------------------------------------|--------------------------|-------------------------------------|
| a) Conflict with or obstruct implementation of the applicable air quality plan? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

CEQA			
Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact

c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?

<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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d) Expose sensitive receptors to substantial pollutant concentrations?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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e) Create objectionable odors affecting a substantial number of people?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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BIOLOGICAL RESOURCES - Would the project:

a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?

<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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COMMUNITY RESOURCES - Would the project:

a) Cause disruption of orderly planned development?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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	CEQA			
	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
b) Be inconsistent with a Coastal Zone Management Plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Affect life-styles, or neighborhood character or stability?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Affect minority, low-income, elderly, disabled, transit-dependent, or other specific interest group?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Affect employment, industry, or commerce, or require the displacement of businesses or farms?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Affect property values or the local tax base?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Affect any community facilities (including medical, educational, scientific, or religious institutions, ceremonial sites or sacred shrines)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
i) Result in alterations to waterborne, rail, or air traffic?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
j) Support large commercial or residential development?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
k) Affect wild or scenic rivers or natural landmarks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
l) Result in substantial impacts associated with construction activities (e.g., noise, dust, temporary drainage, traffic detours and temporary access, etc.)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

CULTURAL RESOURCES - Would the project:

a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

GEOLOGY AND SOILS - Would the project:

a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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CEQA			
Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact

i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

HAZARDS AND HAZARDOUS MATERIALS -

Would the project:

a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

CEQA			
Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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h) Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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HYDROLOGY AND WATER QUALITY - Would the project:

a) Violate any water quality standards or waste discharge requirements?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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e) Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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f) Otherwise substantially degrade water quality?

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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CEQA			
Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact

g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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i) Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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j) Inundation by seiche, tsunami, or mudflow?X

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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LAND USE AND PLANNING - Would the project:

a) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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b) Conflict with any applicable habitat conservation plan or natural community conservation plan?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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MINERAL RESOURCES - Would the project:

a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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NOISE - Would the project result in:

a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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CEQA			
Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact

d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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POPULATION AND HOUSING - Would the project:

a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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PUBLIC SERVICES -

a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

Fire protection?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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Police protection?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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Schools?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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Parks?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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Other public facilities?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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CEQA			
Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact

RECREATION -

- | | | | | |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

TRANSPORTATION/TRAFFIC - Would the project:

- | | | | | |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| a) Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| e) Result in inadequate emergency access? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| f) Result in inadequate parking capacity? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

UTILITIES AND SERVICE SYSTEMS - Would the project:

- | | | | | |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

CEQA			
Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact

c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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g) Comply with federal, state, and local statutes and regulations related to solid waste?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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MANDATORY FINDINGS OF SIGNIFICANCE -

a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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